SYSTEM BuckyDiagnost Ceiling System

LIST OF DOCUMENTATION IN THIS BINDER:

- ⊗ BuckyDiagnost VE/VT V2 with ACL 4
- ○ bucky module of DDF / ACL4
- ○ measuring chambers
- ○ grid data sheet

Note: ⊗ indicates document present

LIST OF ALL BINDERS FOR X-RAY GENERATION:

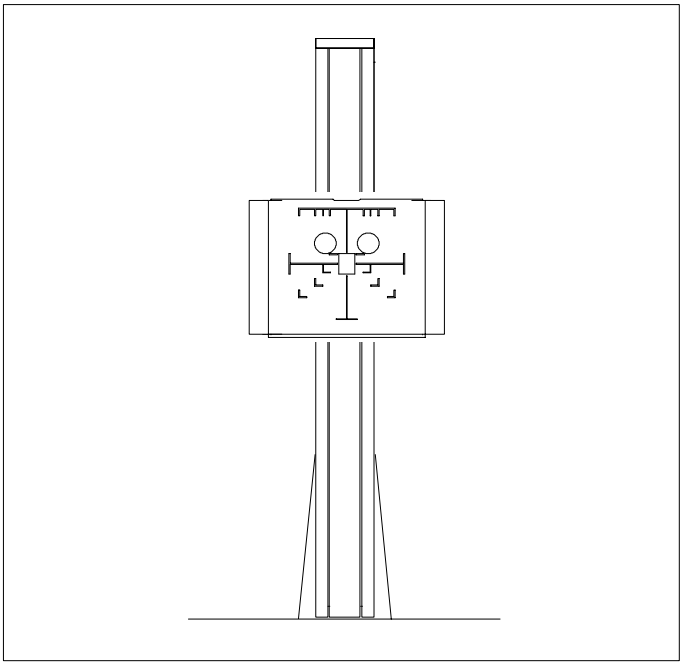
- SYSTEM MANUAL INSTALLATION BuckyDiagnost Ceiling System
- SYSTEM MANUAL CORRECTIVE MAINTENANCE BuckyDiagnost
- SUBSYSTEM MANUAL BuckyDiagnost TH2/TF
- SUBSYSTEM MANUAL BuckyDiagnost CS V4
- SUBSYSTEM MANUAL BuckyDiagnost VE/VT (this binder)
- SUBSYSTEM MANUAL OPTIMUS RAD

PHILIPS

Philips Medical Systems DMC GmbH

SERVICE MANUAL
704
SUBSYSTEM

BuckyDiagnost VE/VT
V2 with ACL 4
9848 600 02591
9848 600 02611



Height adjustable stand for automatic cassette loader ACL4 or digital decoder

DMC Hamburg

Printed in Hamburg, Germany

SERVICE MANUAL - SUBSYSTEM

bucky DIAGNOST VE2

Author: V. Neumann

Type No : 9848 600 02591

bucky DIAGNOST VT2

Type No : 9849 600 02611

In case there are any questions concerning this manual,
please send this LOPAD via fax to 49/(0)40/5078 2481

File: bD_VE2/VT2_22152_AB

List of pages and drawings (LOPAD)

Manual Order No: 4512 984 22152
released: 12/2003

0.1 223 mm (Rosa Karton)
1
3.1

1-0.1	**(99.0)**		
1-1...3	(99.0)		
2-0.1	**(99.0)**		
2-1...12	(99.0)		
2Z-1.1	(00.1)	A4	
2Z-1.2	(00.1)	A4	
2Z-2.1	(00.1)	A4	
2Z-2.2	(00.1)	A4	
2Z-3.1	(00.1)	A4	
2Z-3.2	(00.1)	A4	
2Z-4.1	(00.1)	A4	
2Z-4.2	(00.1)	A4	
2Z-5.1	(00.0)	A4	
2Z-5.2	(00.0)	A4	
2Z-6	(00.0)	A3	
2Z-7	(00.0)	A3	
2Z-8	(00.0)	A4	
2Z-10	(c/03.1)	A3	4512 983 05801
3-0.1	**(99.0)**		
3-1...4	(99.0)		
6-0.1	**(99.0)**		
6-1	(99.0)		
1 ... 2	(00.0)	FCO-Checklist	
Z2-1	(99.0)	A3	

INTRODUCTION

1. Introduction

1.1. General

This documentation is valid for bucky DIAGNOST VE2 / VT2.

The bucky DIAGNOST VE2 / VT2 is part of the bucky DIAGNOST family and can be installed together with the ceiling suspension bucky DIAGNOST CS2 / CS4 and the X-ray generator OPTIMUS 50/65/80.

The bucky DIAGNOST VE2 / VT2 is characterized by:

- counter-balanced bucky unit
- safety catch to prevent excessive pushing down of the bucky unit
- height adjustable bucky unit from 370 to 1900mm above floor
- tiltable bucky unit, VT2 version only
- front panel provided with flat locking rails
- marker on the front panel for indication of AMPLIMAT measuring fields, film sizes and positions
- optional for left-hand or right-hand operation

1.2. What's new ?

- As option a new automatic cassette loader (ACL4) or a digital detector (will supersedes the film cassette) is normal item of the stand

2. Compatibility

- bucky frame	9804 609 51102
- automatic cassette loader ACL4	9848 600 02021
- Grid 36/8 FO 100	9860 834 90101
- Grid 36/8 FO 110	9896 010 26081
- Grid 36/8 FO 140	9896 010 26091
- Grid 36/12 FO 100	9860 836 90101
- Grid 36/12 FO 110	9896 010 26001
- Grid 36/12 FO 140	9896 010 26071
- Grid 36/12 FO 180	9896 010 26041
- Grid 40/12 FO 100	9860 846 90101
- Grid 40/12 FO 110	9860 846 90111
- AMPLIMAT chamber	9890 000 01611
- device for floor fixation	9890 010 02101
- accessories for flat section locking rails	
- patient armrests and patient stretching rest	9890 010 02111

3. Measurements and weights

Measurements	With shipping box	Without shipping box
bucky DIAGNOST VE2	2440 / 780 / 820 mm	2230 / 625 / 425 mm
bucky DIAGNOST VT2	2440 / 780 / 820 mm	2230 / 625 / 425 mm

Weights	With shipping box	Without shipping box
bucky DIAGNOST VE2	250 kg	160 kg (170.2 kg)*
bucky DIAGNOST VT2	295 kg	205 kg

4. Technical data

4.1. Mechanical data

- Mechanical dimensions bucky DIAGNOST VE2 see 2Z-1 / 2Z-2
- Mechanical dimensions bucky DIAGNOST VT2 see 2Z-3 / 2Z-4

4.2. Electrical data

Operating voltages:

- 24VDC

4.3. Environmental Conditions

According to PMS standard UXN 13600 class C1 (indoor temperature controlled)
during regular work:

- Ambient temperature: +10°C ... +40°C
- Relative air humidity: 20% ... 80%
- Air pressure: 700hPA ... 1100hPA

during storage / transport:

- Ambient temperature: -25°C ... +70°C
- Relative air humidity: 5% ... 95%
- Air pressure: 700hPA ... 1100hPA

5. Scope of Delivery

5.1. Standard

- Set of wall fixing material for stand and wall connection box
- Column with counterweight and buck frame
- Wall connection box with corrugated hose and cables from bucky unit to the wall connection box

5.2. Options

- Support triangle for free field standing, includes floor fixing material
- Accessories includes: Patient armrest, patient stretching rest
- Spacer for VE only
- Height distance measuring device for tracking function of bucky DIAGNOST CS2 / CS4

6. Site Preparation

The preliminary planning work is restricted to the selection of the suitable room. The mounting points on mounting surface have to be suitable for tensile strength of 2400N each (concret class B 150 DIN or other national requirements, if the supplied fixing material will be used).

6.1. Movements

- bucky DIAGNOST VE2 (see 2 Z-1 / 2Z-2)
- bucky DIAGNOST VT2 (see 2 Z-3 / 2Z-4)

7. Tools / Material required

- Hammer drill with12 mm carbide drillbits
- Spirit level 1m
- Standard toolkit

8. Test equipment

- Service PC with installed windows program X-Scope and X-Scope cable 4512 130 56931
  (only if the bucky DIAGNOST VE2 / VT2 will be connected to a system with bucky controller)

INSTALLATION

1. Preparation

- Unpack the parts.
  - Check all parts for damage.
- Place the bucky DIAGNOST VE2 / VT2 at the installation position. See room layout plan.
- Remove the red painted parts of transport safeguard. They are not used any more.
- Move the bucky unit to a position so the rope is tense.

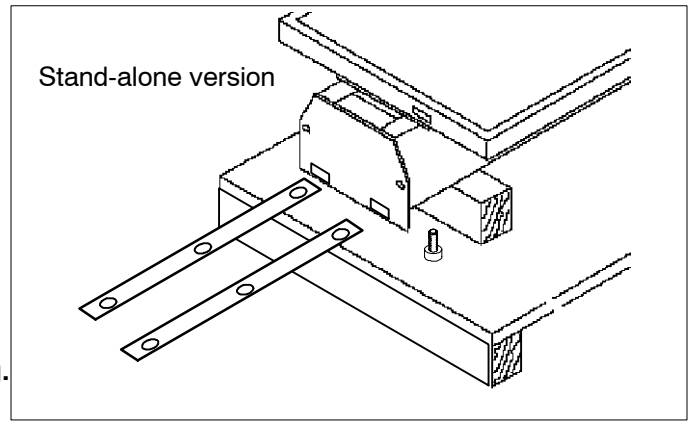
1.1. Preparation of a Stand-alone Version

If there is a free stand version of the bucky DIAGNOST VE2 / VT2 insert the nut–lines and fix each with a bolt. They are used to fasten the support triangles to the column.

- Erect the bucky DIAGNOST VE2 / VT2.

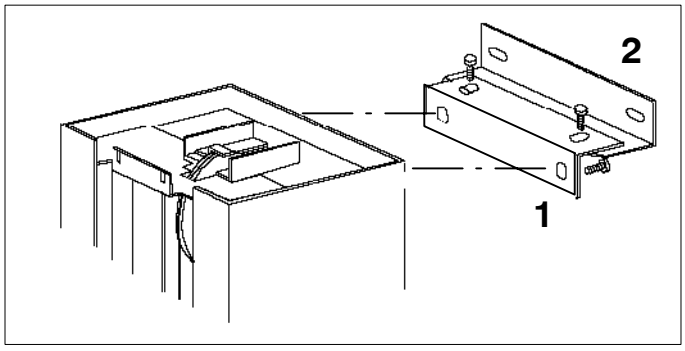
Caution!

Secure the bucky DIAGNOST VE2 / VT2 against tilting.



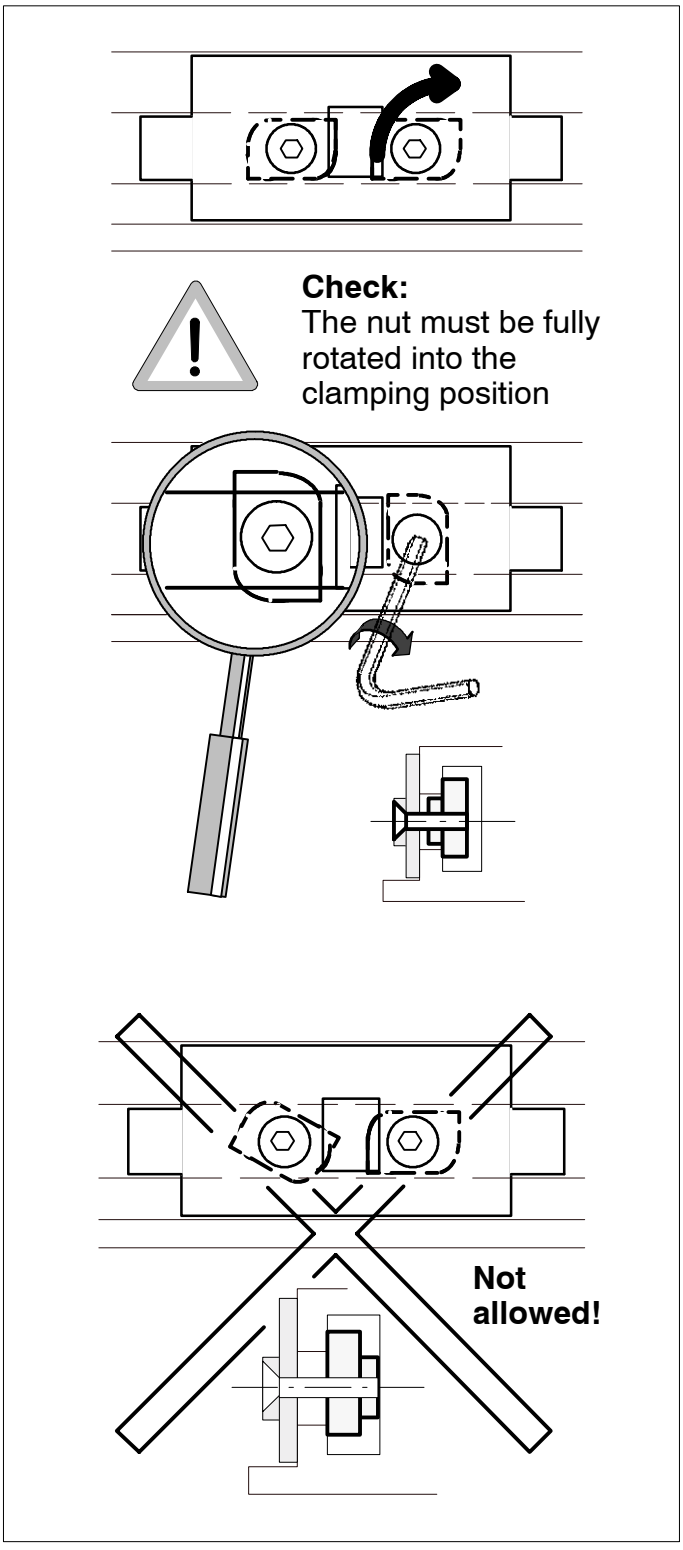
1.2. Preparation of a Wall Stand Version

- Exchange the screws at the angle **1** for two sockethead cap screws with washers supplied.
- Screw the wall fixing angle **1** and the angle **2** together with two sockethead cap screws **M8x12** and washers supplied.

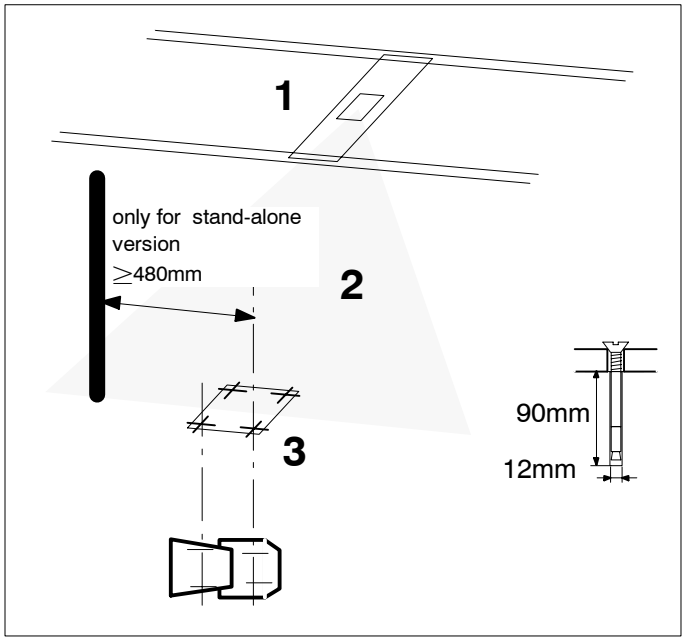


2. Installation

Caution!
When fitting a catch plate to a longitudinal or transverse ceiling rail it is crucial that you ensure the rail nut is fully rotated into the clamping position.The rail nut can be accessed through the hole in the catch plate into which the stop pin engaged and can be rotated using a thin bladed screwdriver. Remember to fully tighten the bolts when the plate position has been confirmed.Do not use a ratchet, because the return movement of the ratchet could rotate the nut counterclockwise



2.1. Mounting Place for bucky DIAGNOST VE2 / VT2 with Laser Alignment Tool



- Ask operator or see room layout plan for position.
- Centre the laser alignment tool **1** between both ceiling rails.

A laser beam **2** marks the centre line **3** of bucky unit.

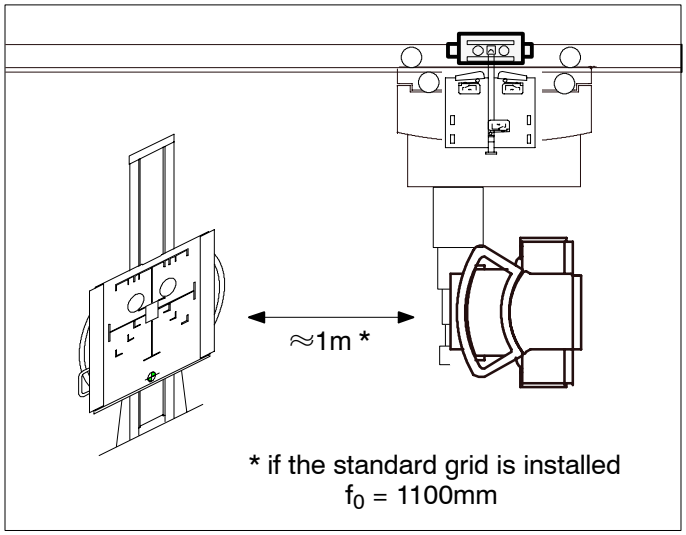
- Place the template two versions in line to the centre line.
  - Fix template.

Note:
For a free stand version of bucky DIAGNOST VE2 / VT2 respect minimal distance to the wall for freely movement of a established ceiling suspension, if the corrugated hose risks an collision.

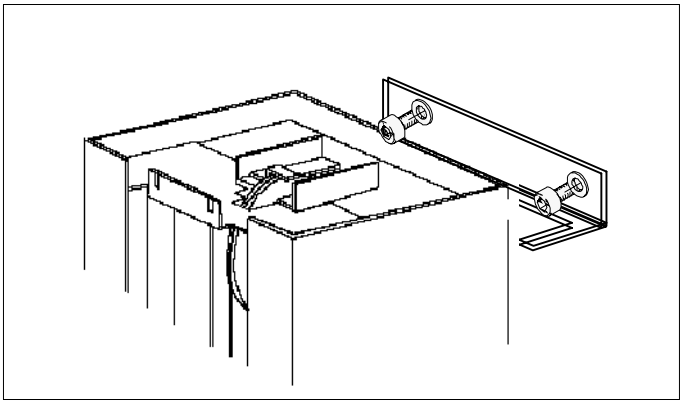
- Drill holes **12mm** about **90mm** deep in the middle of the marked area of the four fixing points.
- Respect the mounting posion of the connection box, see **Installation in a bucky DIAGNOST TH2 system**.

2.2. Installation in a bucky DIAGNOST TH2 system

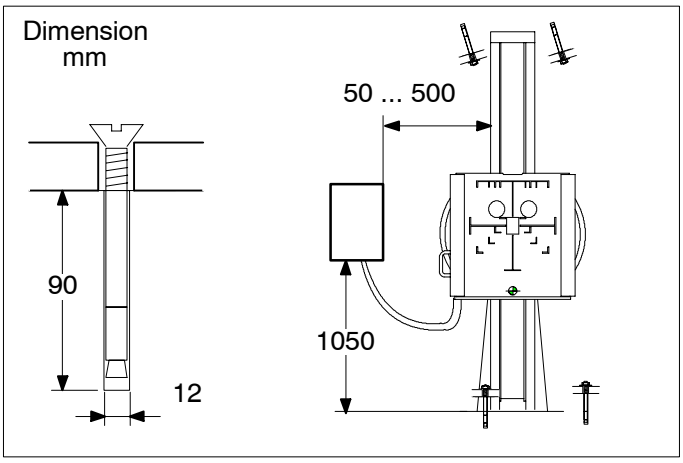
- Determine the working position of bucky DIAGNOST CS2 / CS4 to bucky DIAGNOST VE2 / VT2.
  - Insert a catch plate into the longitudinal rail to the catch pin, if necessary insert a catch plate into the transversal rail of the ceiling suspension too.
- For positioning of drill holes the template for bucky DIAGNOST VE2 / VT2 can be used.



2.3. Wall Stand Installation



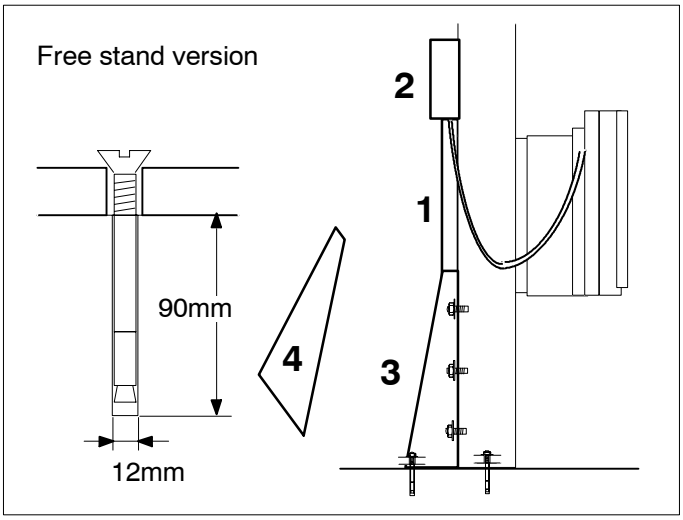
- Mark holes at the wall and drill the holes for the supplied **10mm** dowels.
- Fix the column at the wall with **2x** hexagon screws and washers.
- Check level of the column with a spirit level or use the dual laser alignment tool, use spacer if necessary.
- Fasten all bolts.
- Check the easy movement of the bucky unit.
- Install the wall connection box with supplied **8mm** dowels, screws and washers.



Respect the location of the connection box as shown in the figure.

- Align the wall stand to the middle of the longitudinal axis of the bucky DIAGNOST TH.
  - Use a plummet dropped from the ceiling as reference point.
- Mount the bucky DIAGNOST VE2 / VT2.
  - Mark the two fixing points at the floor.
  - Drill the holes for the supplied **12mm** dowels.
  - Insert the two anchor dowels into the holes.
  - Fix the bucky DIAGNOST VE2 / VT2 at the floor with the screws and washers supplied.

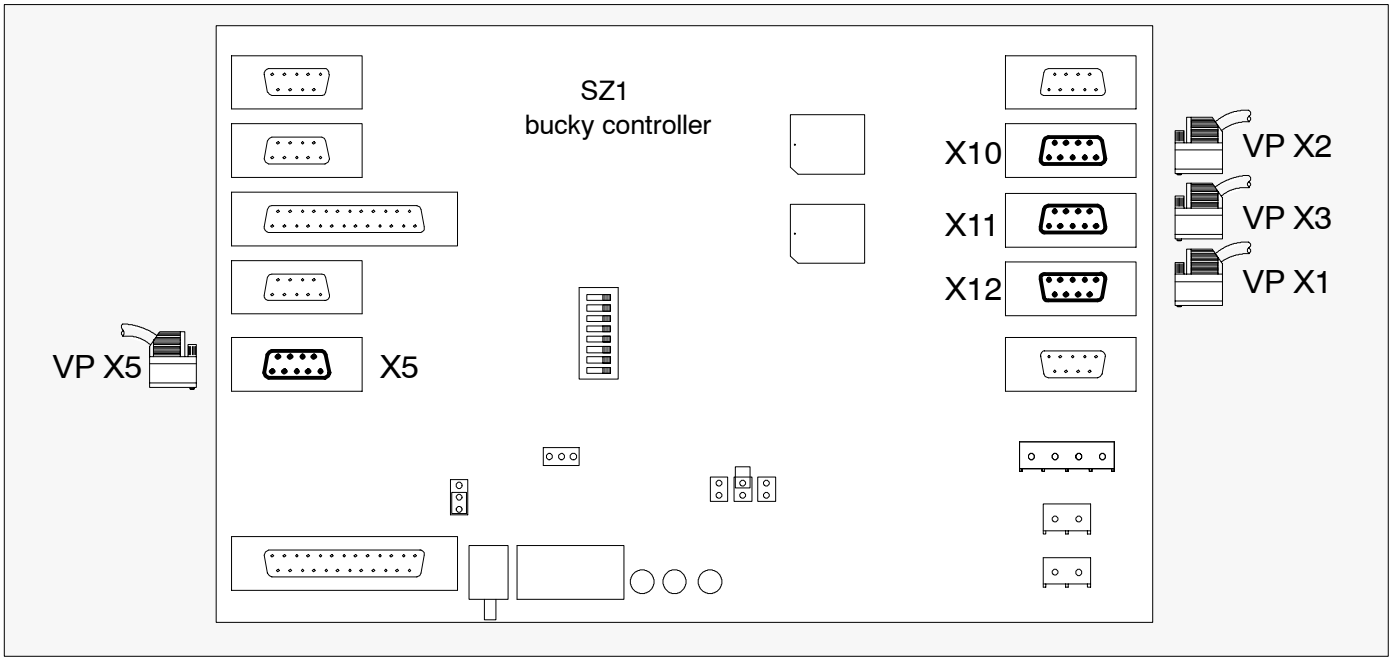
2.4. Free Stand Installation



- Install the cable conduit **1**.
- Stick the connection box **2** to the column.
- Install the support triangles **3** at the rear side of the column by fixing it to the nut-lines.
- Mark the holes at the triangle on the floor and drill the holes for the supplied **12mm** dowels.
- Fix the triangle at the floor with the screws supplied.
- Fasten all bolts.
- Route the cable to the connection box.
- Install the cover **4** on the triangles **3**.
- Check the easy movement of the bucky unit.

3. Connection of bucky DIAGNOST VE2 / VT2 to bucky Controller

- Connect the named cables to the bucky controller as shown in the figure.

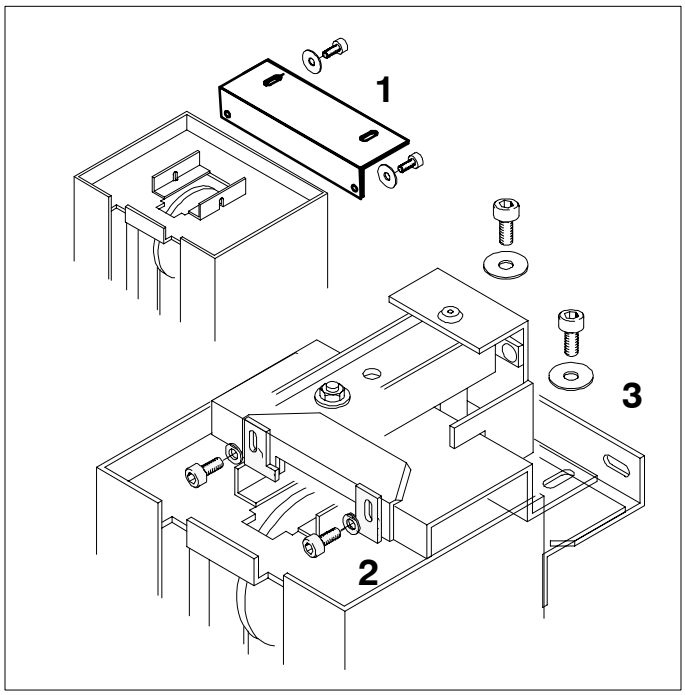


Functions of:

VP X1 – SZ1 X12	Exposure release of VE / VT	VP X3 – SZ1 X11	Tilt function of VT
VP X2 – SZ1 X10	Format sensing cassette of VE / VT	VP X5 – SZ1 X5	Tracking of VE / VT

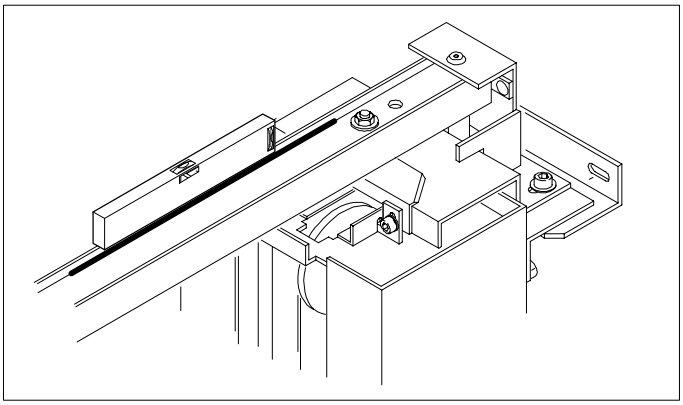
3.1. Preparation with BABIX Suspension Gear (option)

- Attach the BABIX suspension gear to the top of the column as shown in the drawing.
  - Screw the angle **1** to the wall stand top.
  - Insert the two plates **2**.
  - Screw the suspension gear to the plates **2** and the wall angle **3** (this item is needed for a wall stand version only, do not install for a free stand version).



Adjustment of the arm can be made after mounting the bucky DIAGNOST VE2 / VT2

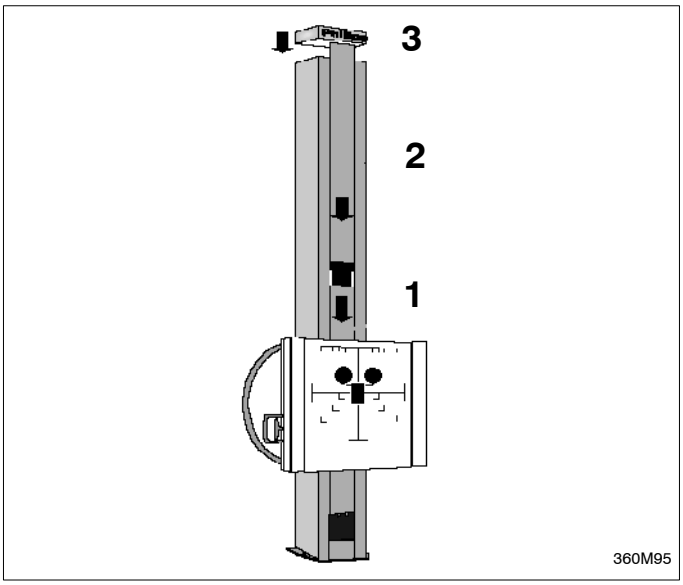
- Adjust the arm of the suspension gear
  - Loosen the screws of the angle just a little bit.
  - Adjust the arm for a horizontal position, use a spirit level.
  - Tighten the screws of the angle.



4. Installation of the Covers

Install cover after checking the bucky DIAGNOST system.

- Insert the lower cover **1** through the polyamide guides at the carriage and push it into the support.
- Insert the top cover **2** into the guide bolts and fasten the nuts at the stay bolts on the top.
- Install the top cover panel **3** with Philips brand name.



5. Installation of Accessories

The accessories can be ordered separately.

5.1. Patient Armrests

- Install the armrests to the left and right hand side of the bucky unit with two screws each.

5.2. Patient Stretching Rest

- Install the stretching rest to the left or right hand side of the bucky unit.

5.3. Installation of Additional Counterbalances

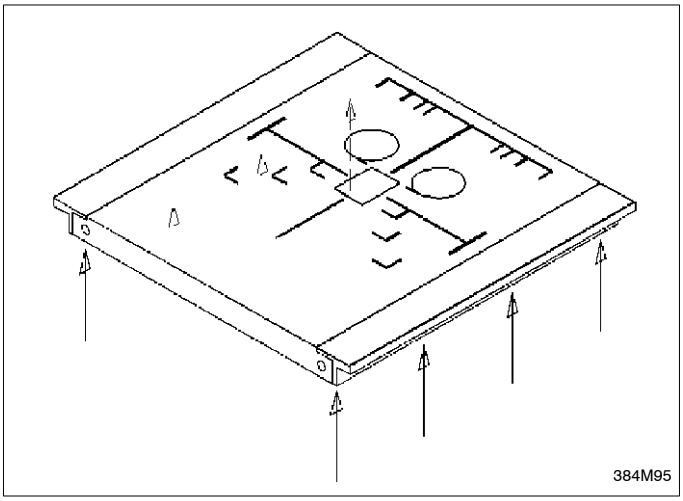
These works have to be done if accessories are added after a new customer order.

Version VE2

- Re-install the bucky unit.
- Remove the four additional counterweights.
- Install the bucky unit again.

Version VT2

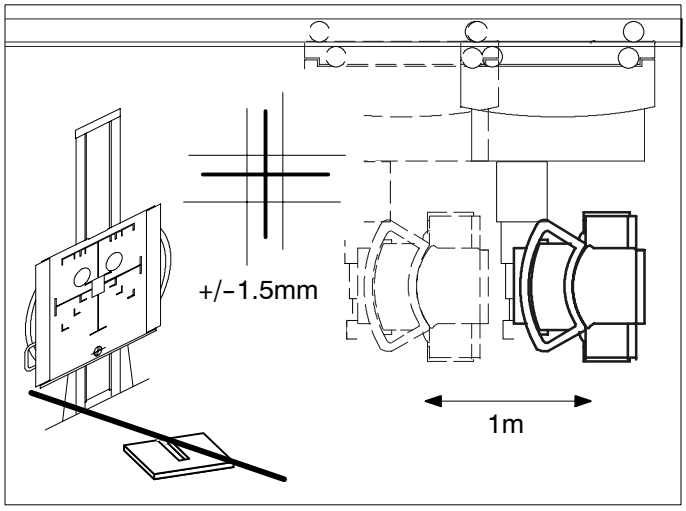
- The counterweights are placed in the lengthwise carrier opposite side of the brake handle.
- Open the cover at the lengthwise carrier and remove the additional counterweights .



6. Alignment of bucky DIAGNOST VE2 / VT2 in a bucky DIAGNOST TH system

6.1. Alignment to bucky DIAGNOST CS2 / CS4

- Swing the tube housing assembly towards the bucky unit.
- Place a mirror on the front plate.
- Switch on the field illuminator.
  - Check the alignment.
- Move the ceiling suspension by **1m** in longitudinal direction.

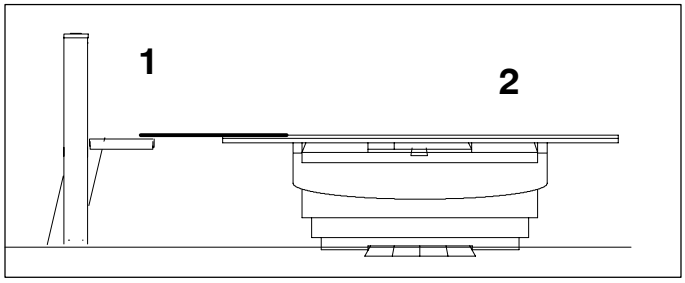


The migration of the cross-hairs to the vertical line of the bucky unit must not exceed **+/-1.5mm**.

- Align the column rectangular with respect to the beam axis, use spacer if necessary.

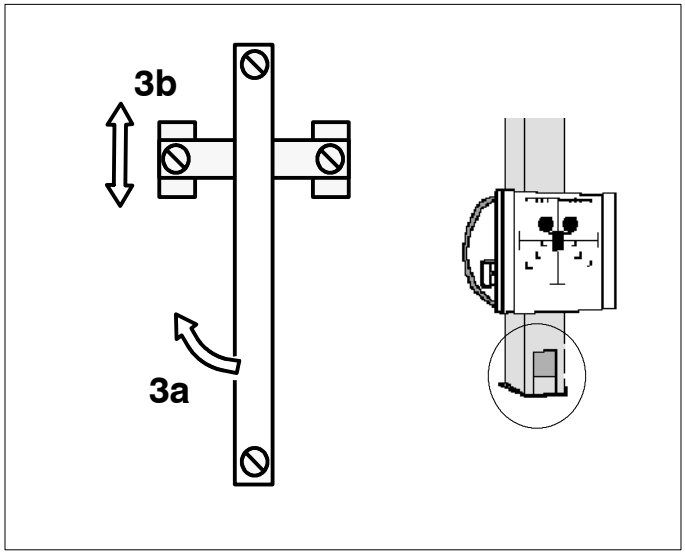
6.2. Switch Adjustment of bucky DIAGNOST VT

In 90° position the bucky unit **1** should be adjusted to the same floor distance as the bucky unit in the table **2**.



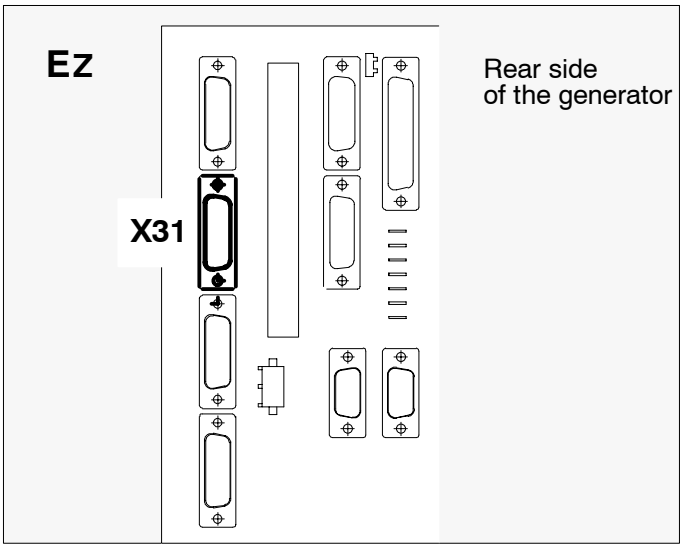
- Tilt the bucky unit to the 90° position and adjust the floor distance (VPS1) at the switch element **3** via loosening screws.
  3a = wide adj (swing of 180°)., **3b** = fine adj.

- Fasten screws.



7. Programming the System

7.1. Programming the Generator



- Connect the bucky DIAGNOST VE2 / VT2 to the genrator port **EZ X31**.

7.1.1. Compatibility

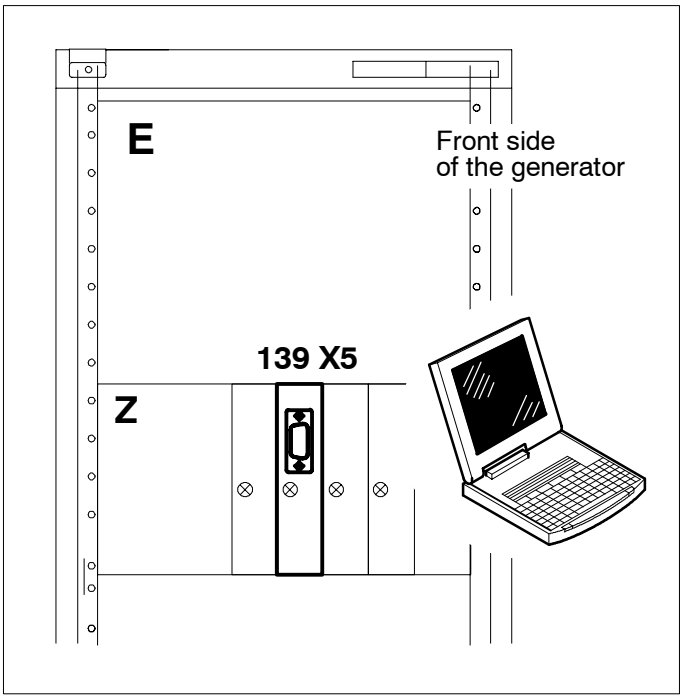
MS DOS ≥3.3
XRG-Scope release 3.x

TOOLKIT

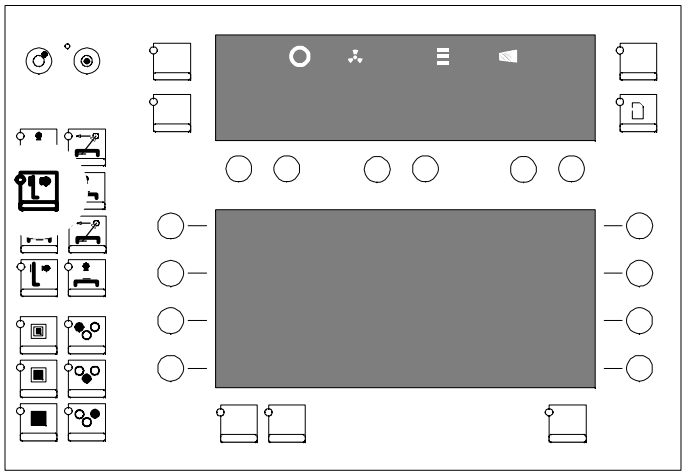
Items:

1	9896 000 xxxxx	XRG-Scope release 3.x
1	4512 130 56931	X-Scope service cable

7.1.2. Programming



- System and PC are **OFF**.
- Connect the PC to the generator at **EZ139 X5**. Only port COM 1 of the PC can be used.
- Switch **ON** system and PC.
- Call program MS DOS.
- Call program XRG-Scope.
- Select
  - `Optimus`
  - `Program`



- Select
  - `Registration Devices`
  - `RGDV3`
    (= registration device of the place for wall stands)
  - `Data Set A`
  - `Dose Measurement Input`
  - `EZX31`

Registration device	RGDV1	RGDV2	RGDV3	RGDV3	RGDV4
possible installed subsystem	TH	Tomo	VE/VT	VE/VT	free
Room	Room1	Room1	Room1	Room1	Room1
Tube	Tube1	Tube1	Tube1	Tube1	Tube1
Release circuit number	Circuit1	Circuit2	Circuit3	Circuit3	Circuit4
Enable handswitch at desk	YES	YES	YES	YES	YES
Syncmaster present	yes	yes	yes	yes	no
Exposure switch type	double step	double step	double step	double step	double step
bucky format density correction	[0]	[0]	[0]	[0]	[0]
Cone density correction	[0]	[0]	[0]	[0]	[0]
Dose measurement input	EZX21	none	EZX31	EZX31	none
Dose measurement sensor type	Amplimat	Amplimat	Amplimat	Amplimat	Amplimat
Exposure series tomo movement	NO	YES	NO	NO	NO
Release delay	enable	enable	enable	enable	disable
Mounted radiographical controller	none	none	none	**BuCo1**	none
Release circuit adaption unit	1WA	1WA	**1WA**	none	none
Mounted tomo extension	none	none	none	none	none

- Select **1WA** if the bucky DIAGNOST VE2 / VT2 is connected **without** bucky controller

or

- Select **BuCo1** if the bucky DIAGNOST VE2 / VT2 is connected **to** bucky controller

- To store the settings press key F2 on PC

- To activate the settings restart the system
  - Switch system **OFF** then **ON**

7.2. Programming the bucky Controller with X-Scope

If the bucky DIAGNOST VE2 / VT2 is connected to the bucky controller the new configuration must be programmed.

- See for X-Scope documentation of the special SMI of the installed system at side.
  (E.g. bucky DIAGNOST TH
  SYSTEM MANUAL INSTALLATION)

Quick programming with X-Scope:

- Select *bucky DIAGNOSTProgram Manual...*
- *Room Configuration*
  - *Wallstand exposure = YES*
  - Save data via mouse click on *Apply=F2*, then *OK=F3*
- *Wallstand*
  - Select special data for the wallstand
- *Tracking* (if installed)
  - *WS Pick-up Band [mm]*
- Save data via mouse click on *Apply=F2*, then *Cancel=F5*

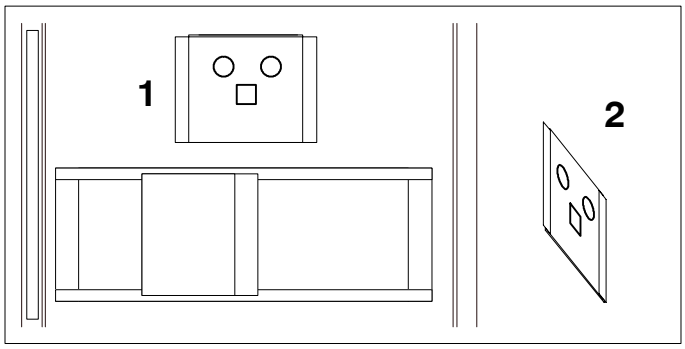
- Select *bucky DIAGNOSTAdjustment...*
- *Height & Pos...*
  - *Wallstand Height...*
  - Select special data for the wallstand
  - Save data via mouse click on *Apply=F2*, then *OK=F3*
  - *CS SID Pos...*
  - Select special data for the wallstand
  - Save data via mouse click on *Apply=F2*, then *OK=F3*
- *Cassette Loader*(if old types of cassettes are in use)
  - *Wallstand*
  - Select special data for the wallstand cassette loader
  - Save data via mouse click on *Start=F2*
  - Save data via mouse click on *Apply=F2*, then *OK=F3*
- *Tracking CS Offsets*
  - Input special data for the wallstand tracking
  - Save data via mouse click on *Apply=F2*, then *OK=F3*

- **After restarting the system all settings are active.**

8. Reconstruction of bucky DIAGNOST VE2 / VT2 to bucky DIAGNOST CS2 / CS4

8.1. Change Position from longitudinal to transverse Side

If the position of the bucky DIAGNOST VE2 / VT2 must be changed from longitudinal sensing **1** to transverse sensing **2** then a change of the catches at the ceiling suspension is necessary.



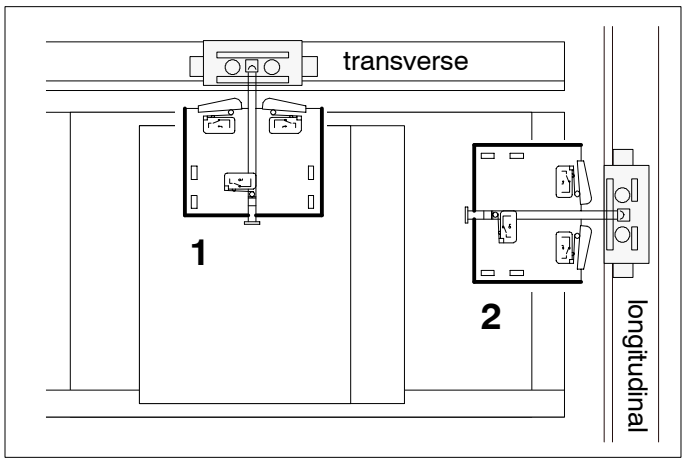
8.1.1. Man Power

The reconstruction has to be done on the ceiling suspension by **one** engineer over three hours.

3 h	bucky DIAGNOST VE2 / VT2 Reconstruction Handing over and introduction	

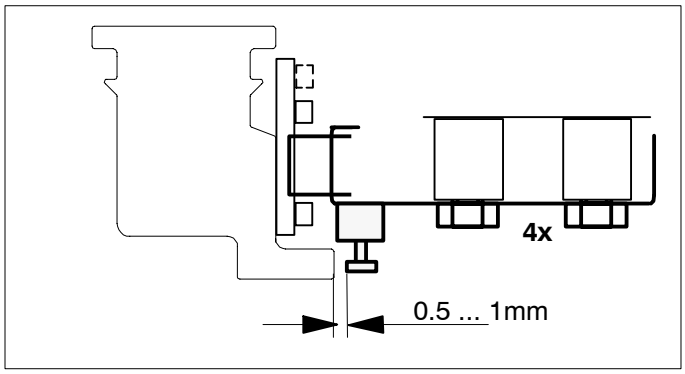
8.1.2. Mechanical Installation

- Disconnect the catch **1** from **UZ X8** at the transverse carriage and **2** from **UB AX1** at the longitudinal carriage**.**
- Change the catches with one another.
  - Connect the catches.
- Position the catches to the catch plates.



If necessary position the catch to the correct position.

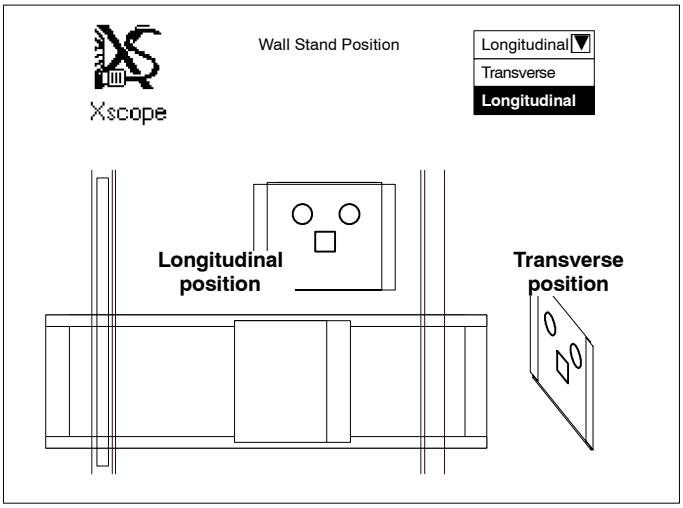
- Loosen four bolts to adjust the catch so that the pin slides completely into the plate.
  - Pin moves into the plate = switch is electrically closed, check this.
- Fix the four bolts.
- Check catch plate position at the transverse rail too.



8.1.3. X-Scope Programming

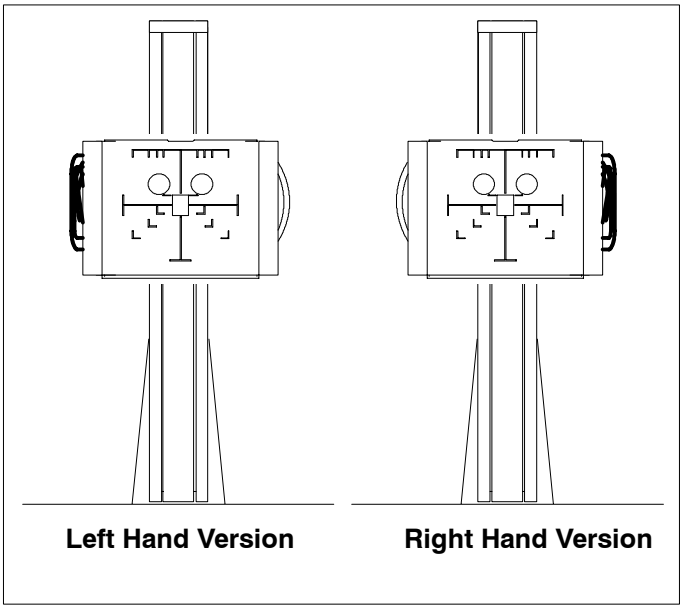
If the mechanical reconstruction is done the new function must be programmed into the bucky controller.

- See documentation of program X-Scope (manual is part of the Bucky DIAGNOST TH SYSTEM MANUAL INSTALLATION)
  - See Wall Stand, Wall Stand Position

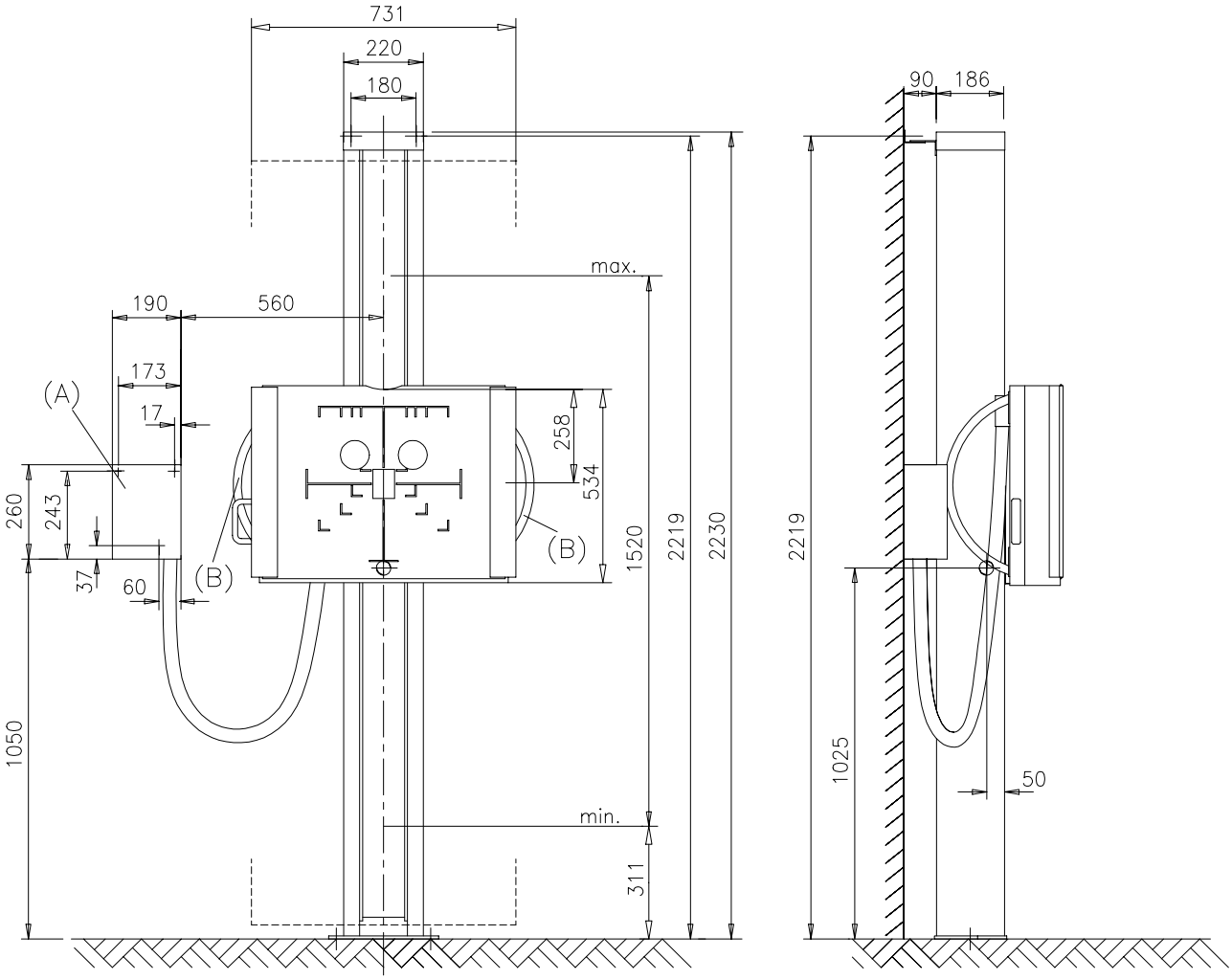


8.2. Change from Left Hand Version to Right Hand Version

Note:
Modification is not possible. The order must be placed, see questionnaire.

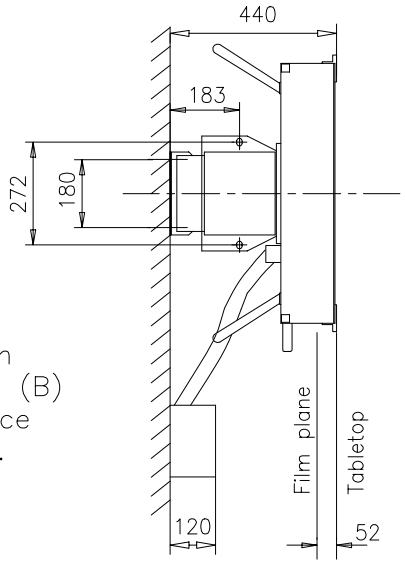


■



measurements in mm scale 1:20

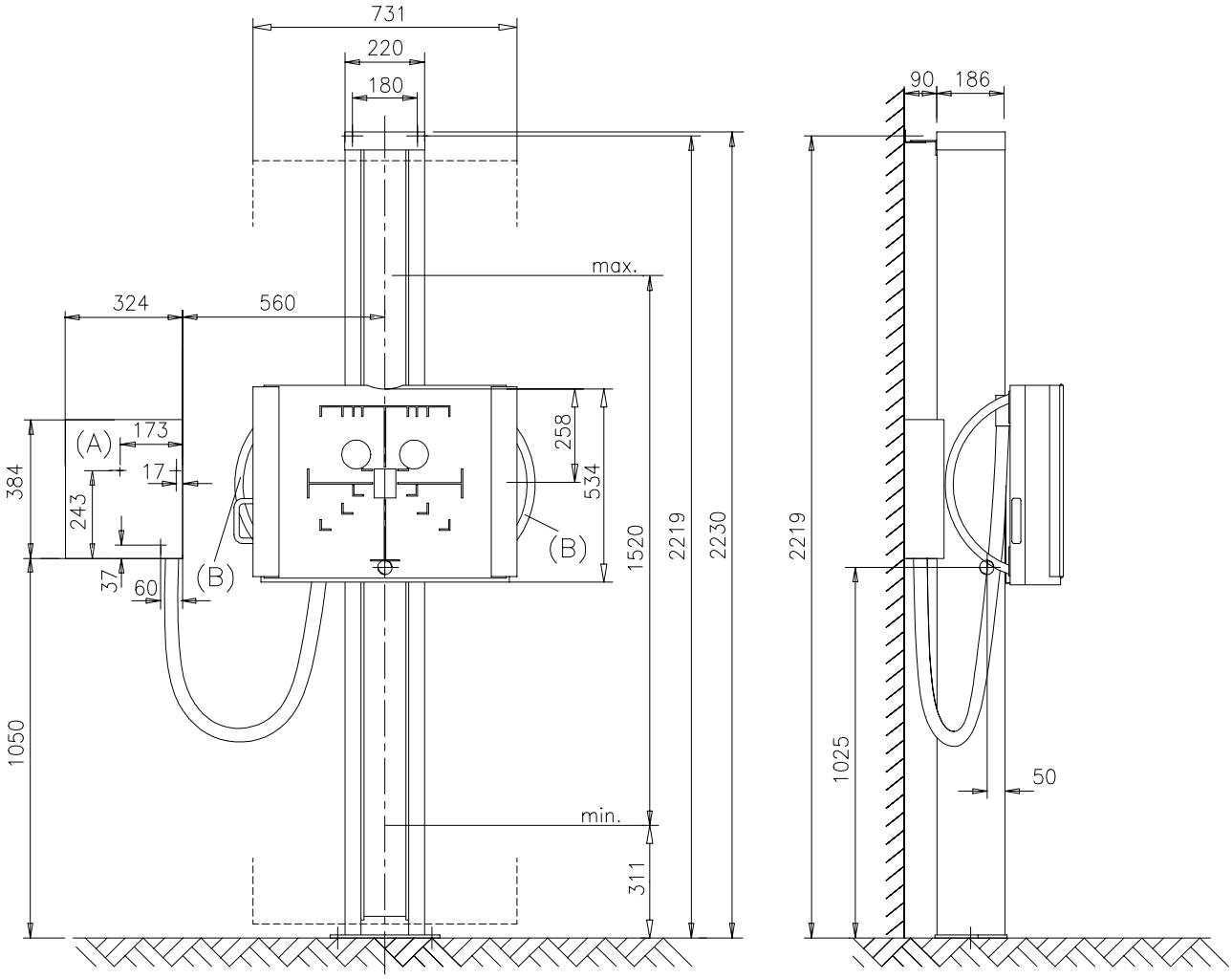
(B) = Option



WARNING:
Make sure there is enough distance between the wall connection box (A) and the handle (B) of the bucky. If there is not enough distance injury may accur when the bucky is moved.

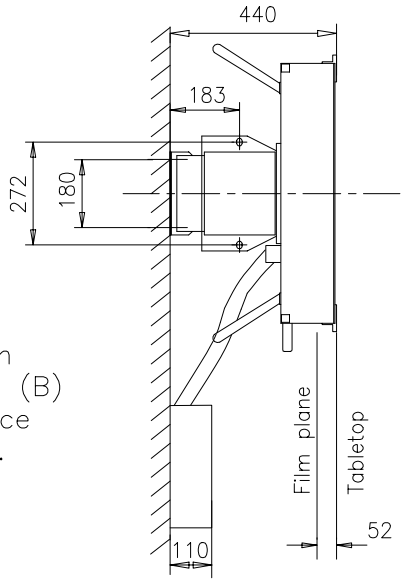
A4 00-06-26 Ost.
00971z11

bucky DIAGNOST VE2 with ACL4
Wall mounted version
Mechanical dimensions



measurements in mm scale 1:20

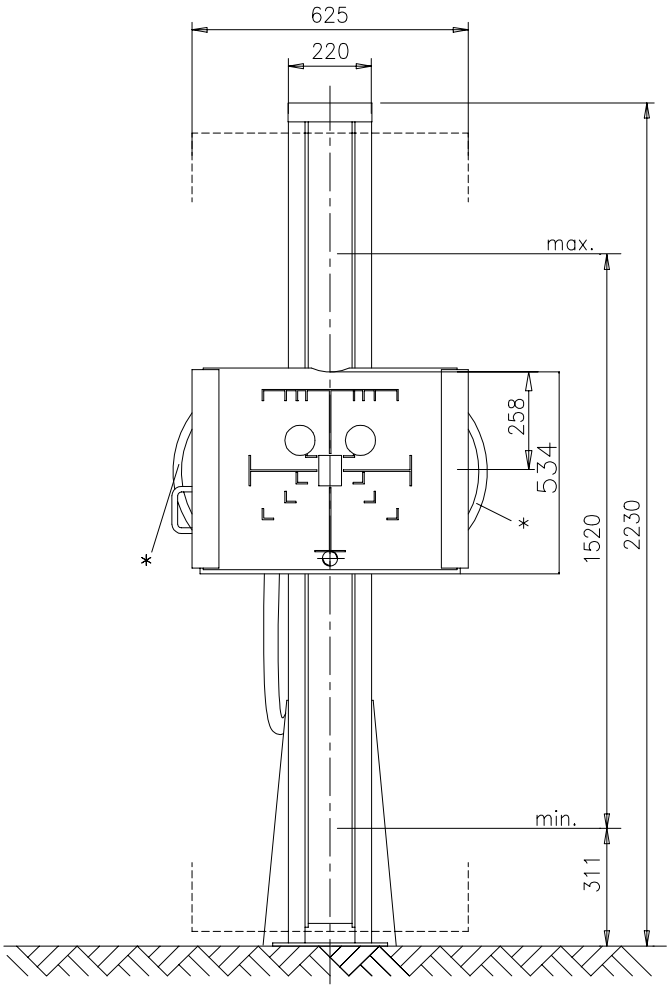
(B) = Option

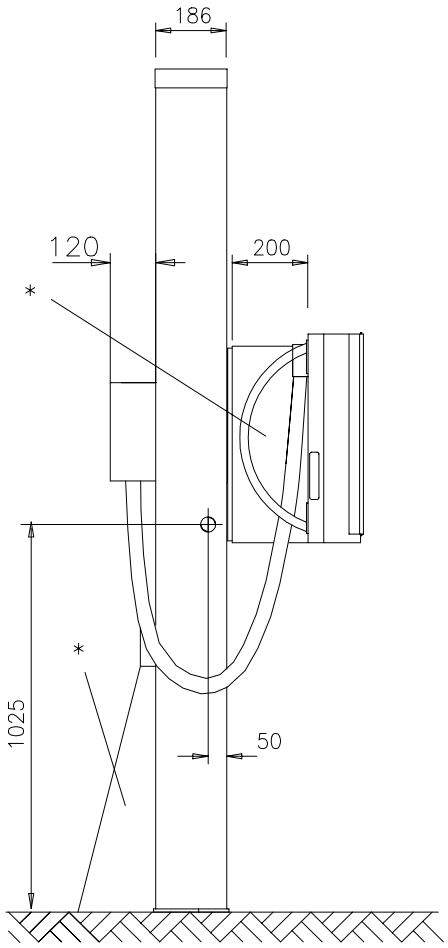


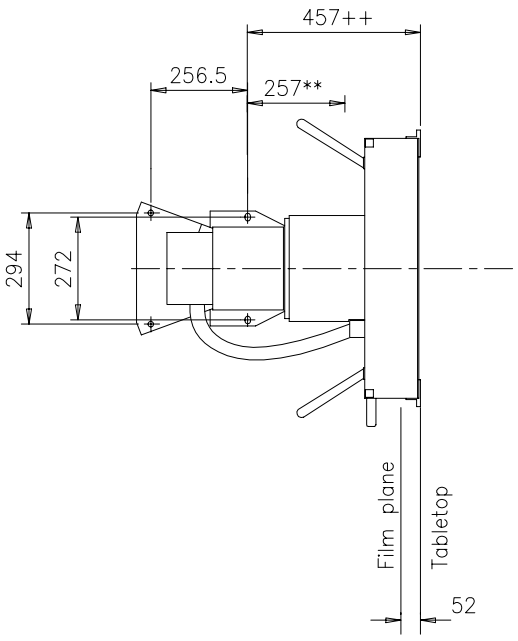
WARNING:
Make sure there is enough distance between the wall connection box (A) and the handle (B) of the bucky. If there is not enough distance injury may accur when the bucky is moved.

A4 00-06-27 Ost.
00971z12

bucky DIAGNOST VE2 with ACL4
Segment control unit
Wall mounted version
Mechanical dimensions







measures in mm scale 1:20

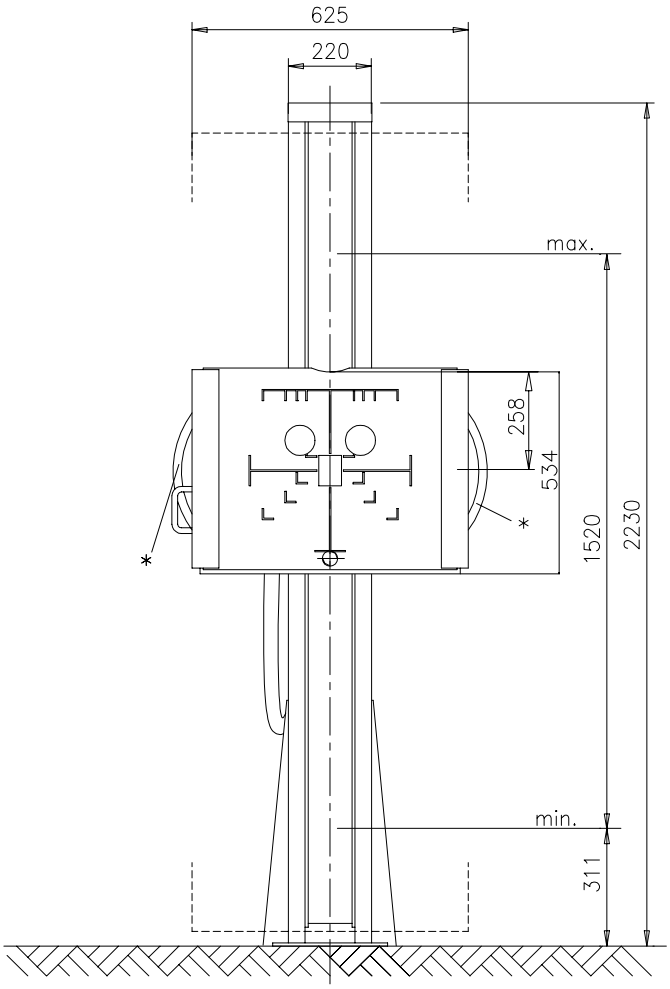
* = Option

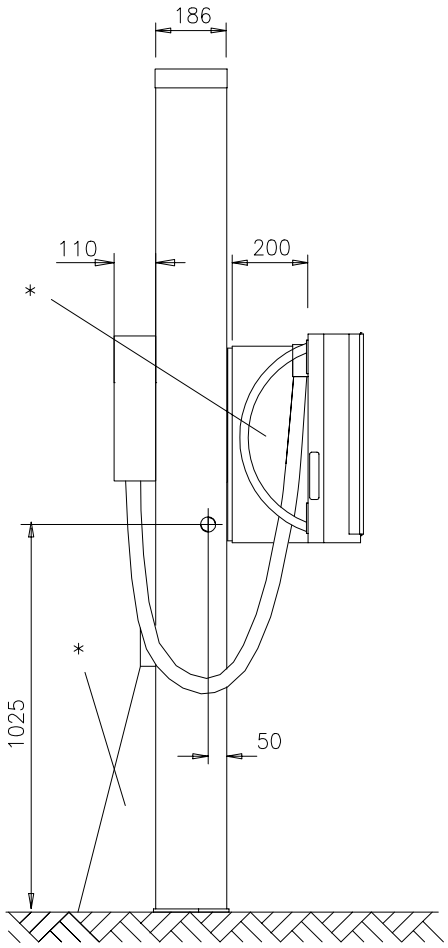
** = distance without spacer

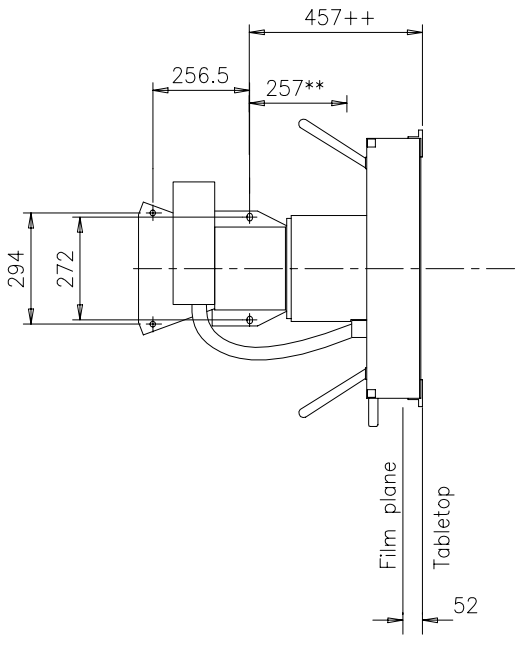
++ = distance with spacer

A4 00-06-27 Ost.
0097Iz13

bucky DIAGNOST VE2 with ACL4
Stand alone version
Mechanical dimensions







measures in mm scale 1:20

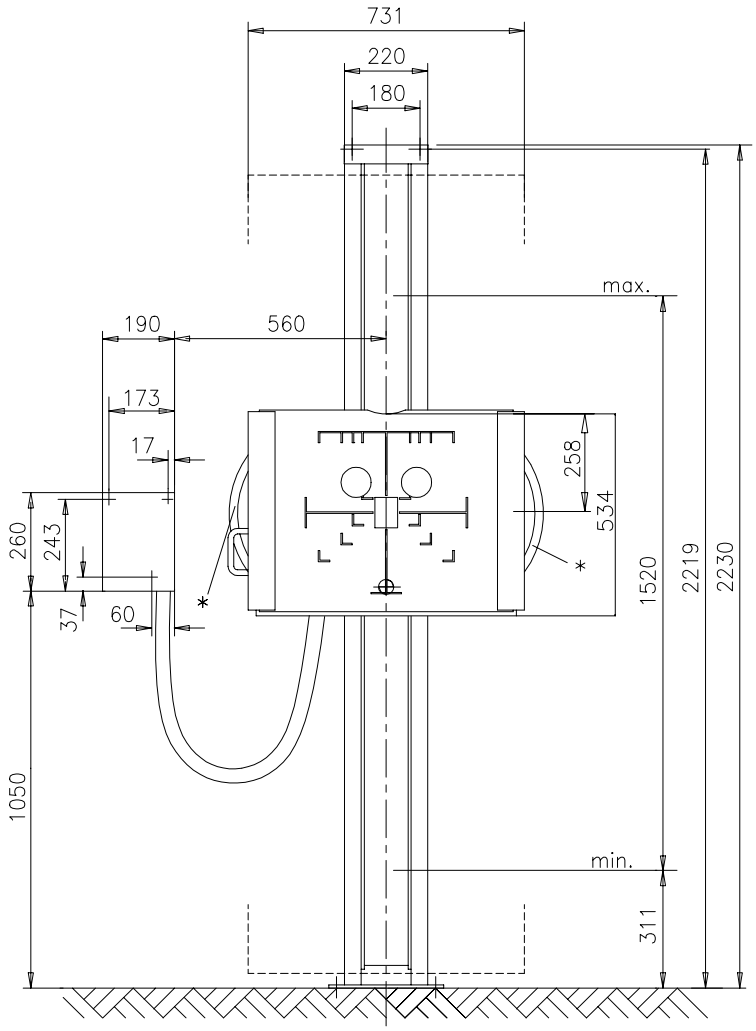
* = Option

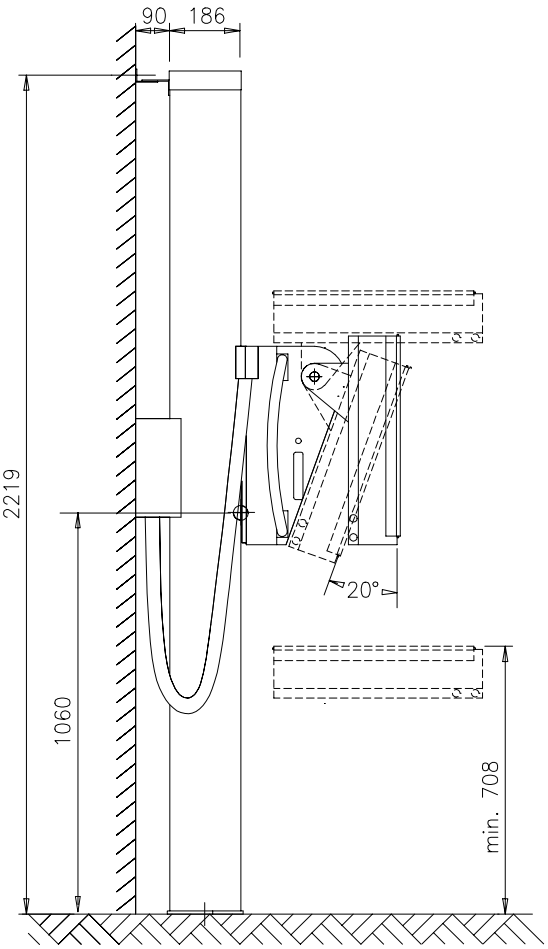
** = distance without spacer

++ = distance with spacer

A4 00-06-27 Ost.
0097Iz14

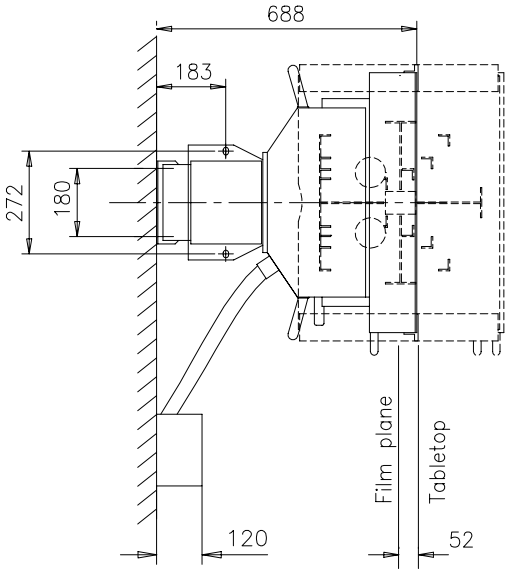
bucky DIAGNOST VE2 with ACL4
Segment control unit
Stand alone version
Mechanical dimensions





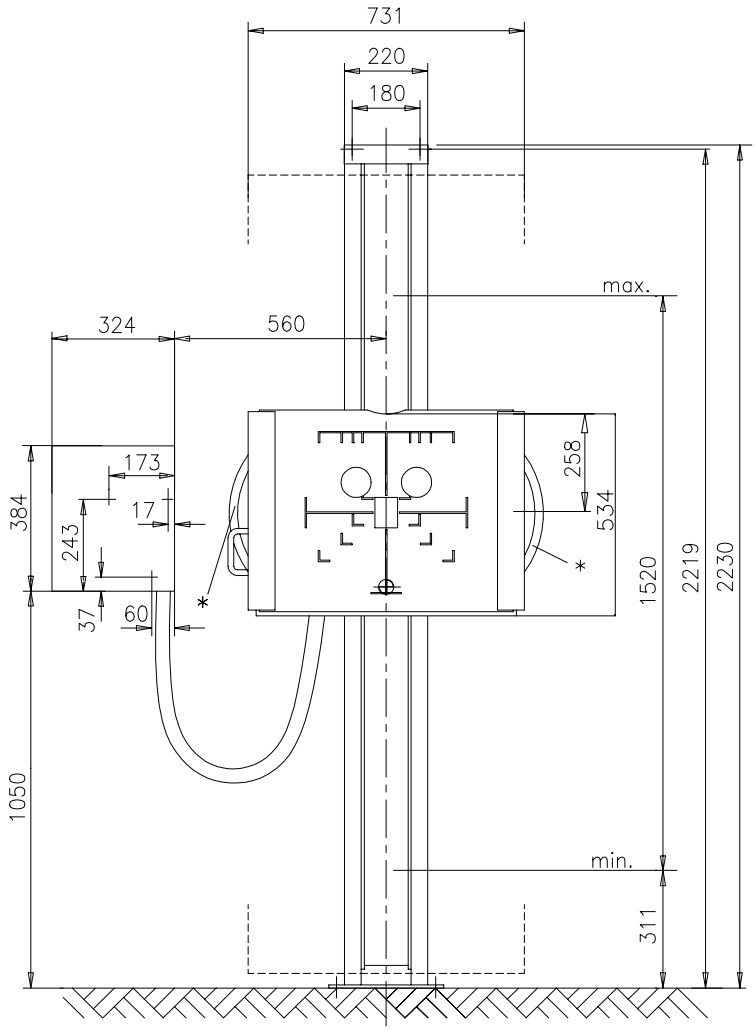
measures in mm scale 1:20

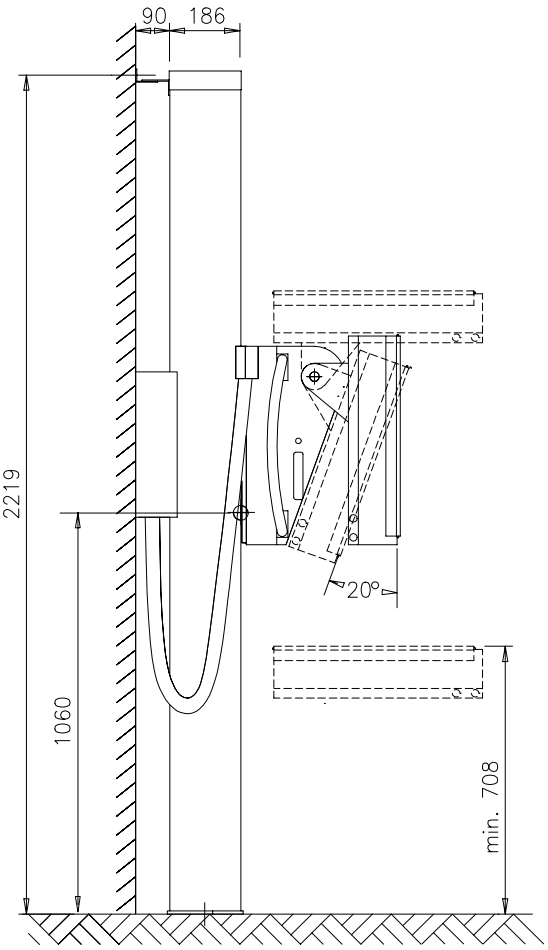
* = Option



A4 00-06-27 Ost.
00971z15

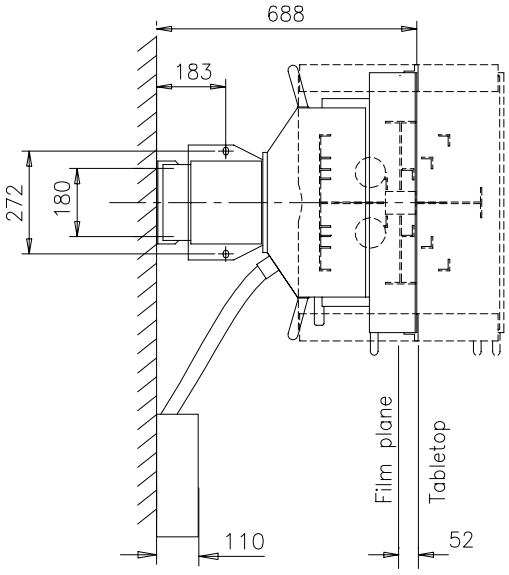
bucky DIAGNOST VT2
Wall mounted version
Mechanical dimensions





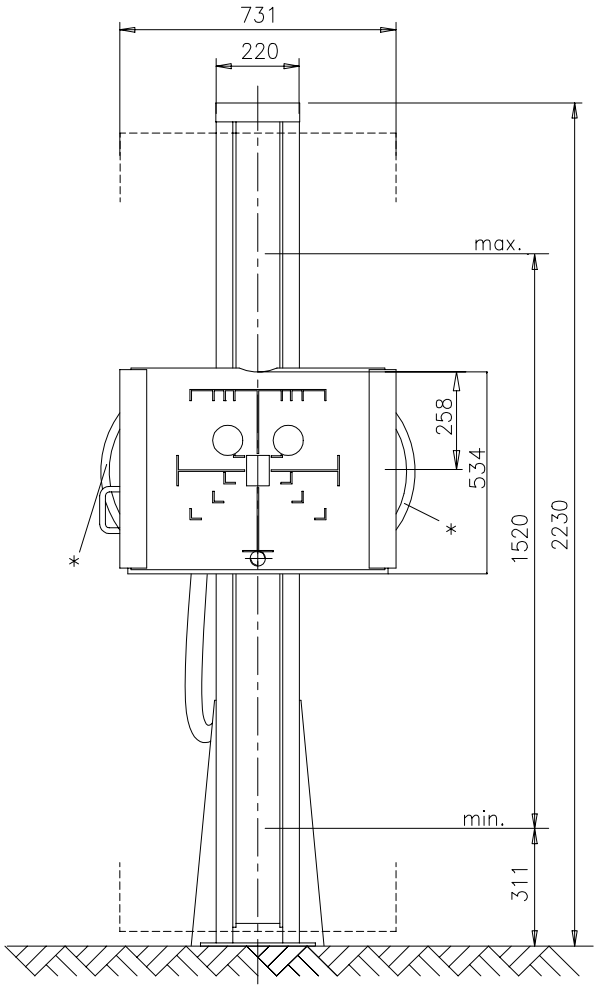
measures in mm scale 1:20

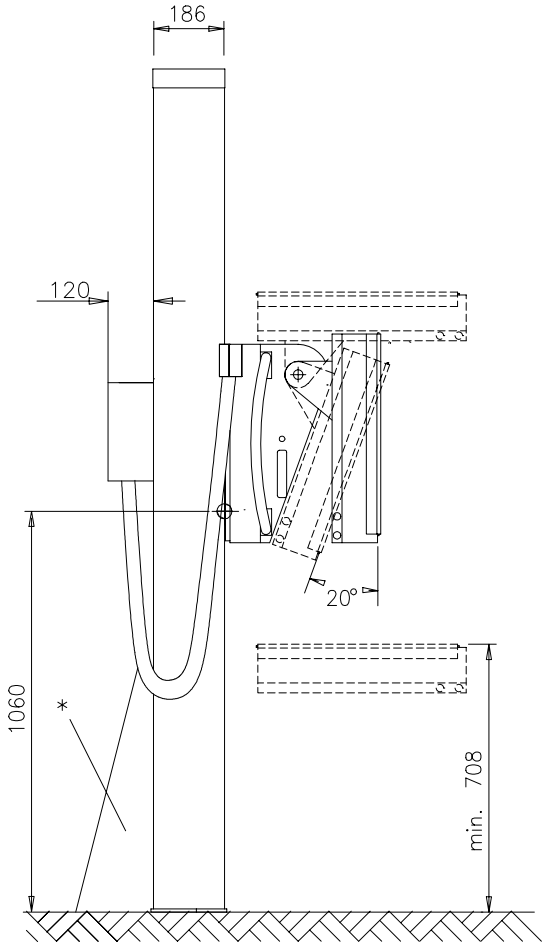
* = Option

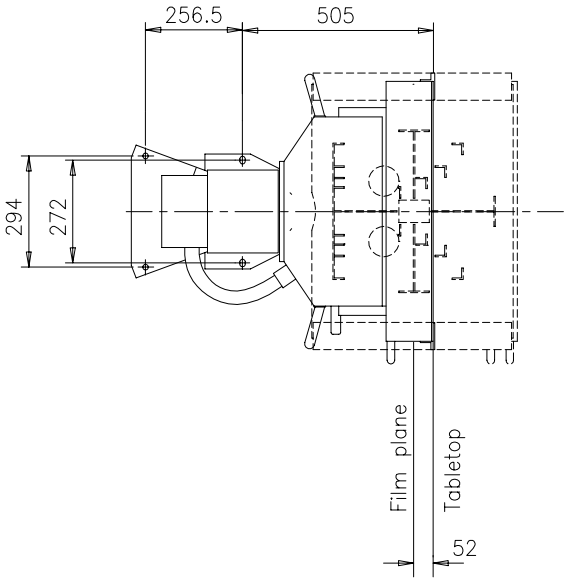


A4 00-06-27 Ost.
00971216

bucky DIAGNOST VT2
Segment control unit
Wall mounted version
Mechanical dimensions





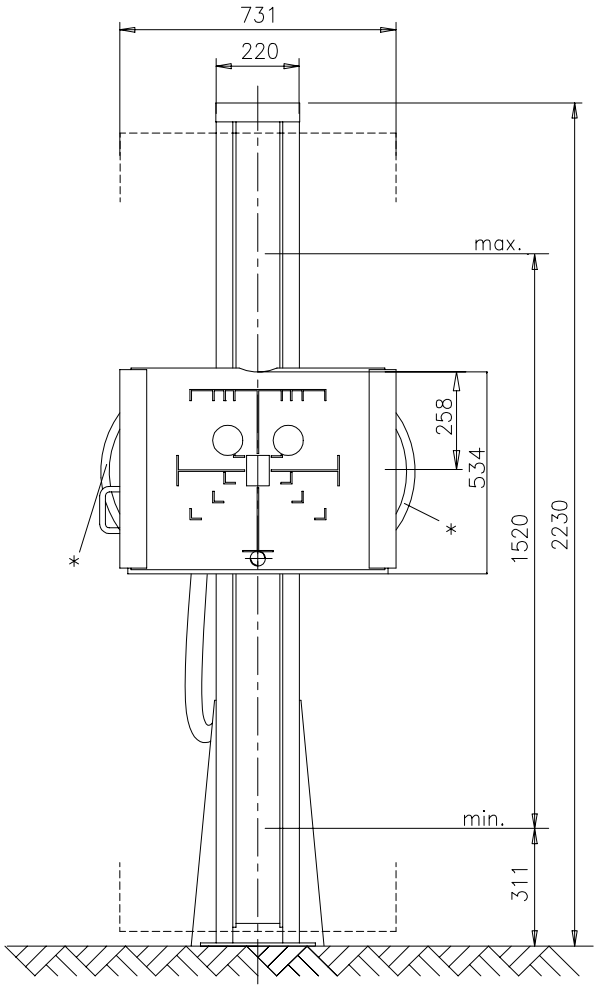


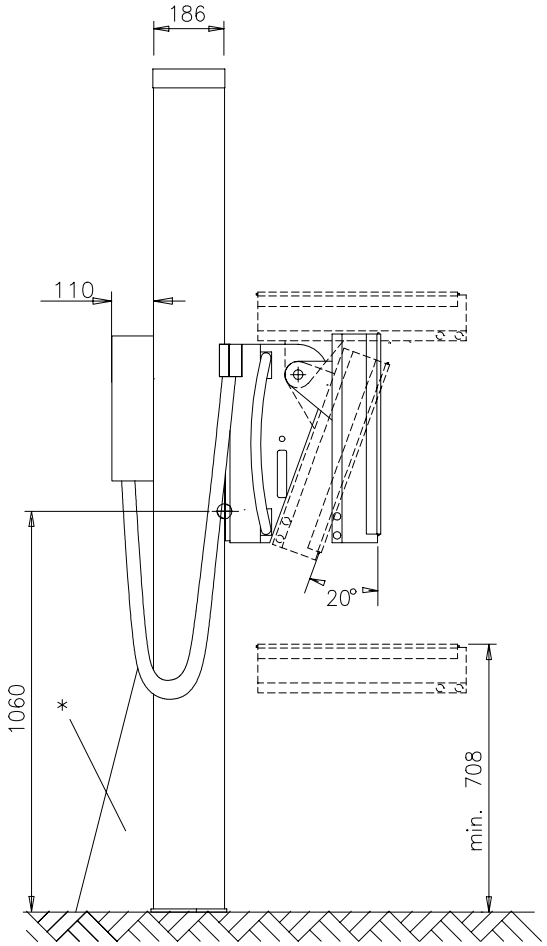
measures in mm scale 1:20

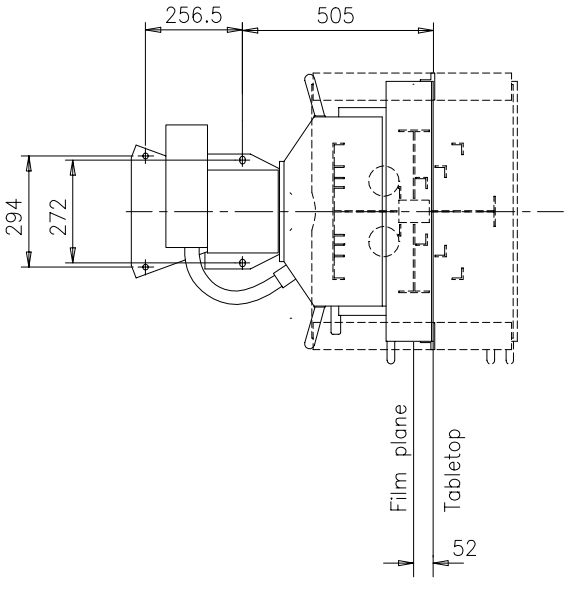
* = Option

A4 00-06-27 Ost.
00971z17

bucky DIAGNOST VT2
Stand alone version
Mechanical dimensions







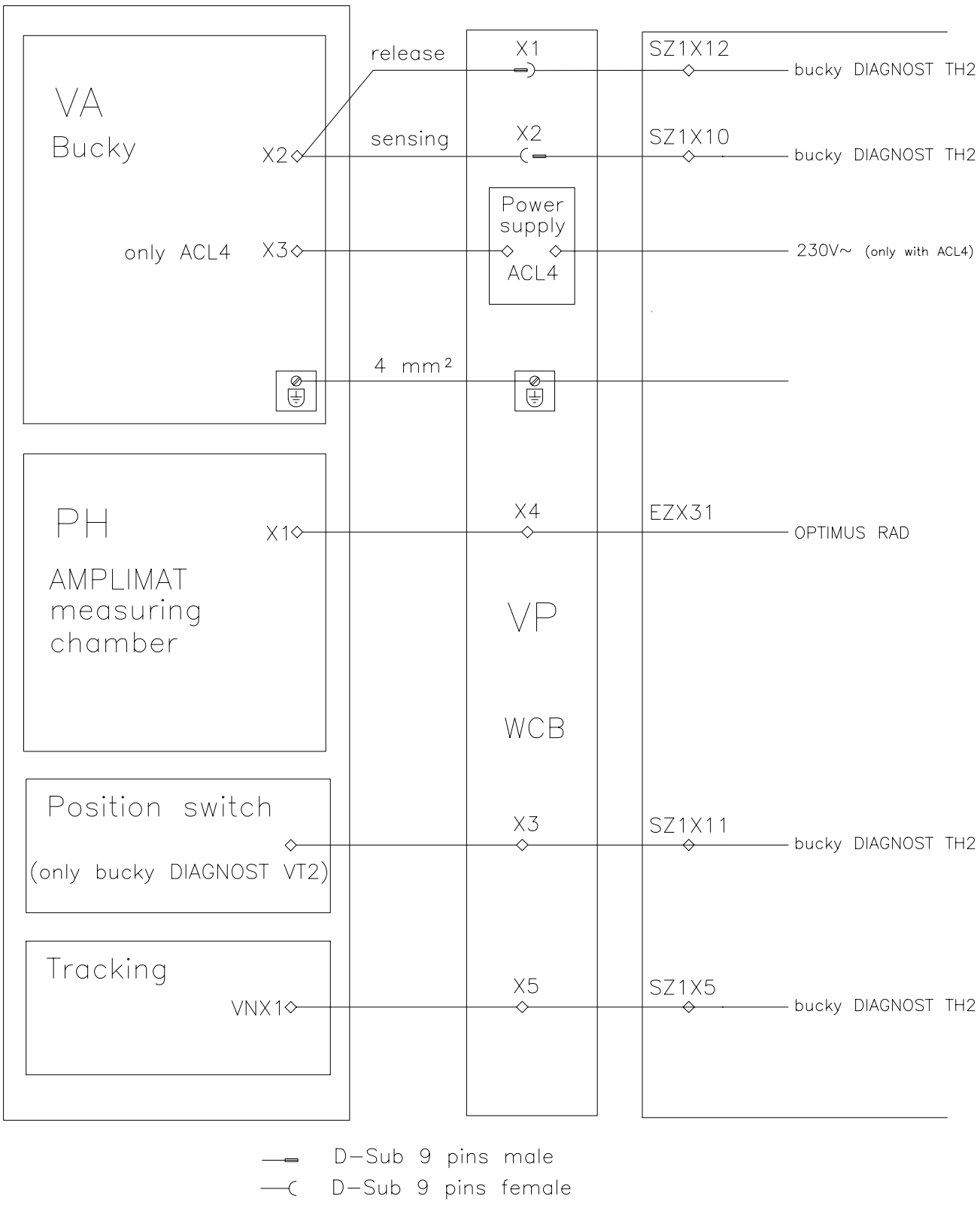
measures in mm scale 1:20

* = Option

A4 00-06-27 Ost.
00971z18

bucky DIAGNOST VT2
Segment control unit
Stand alone version
Mechanical dimensions

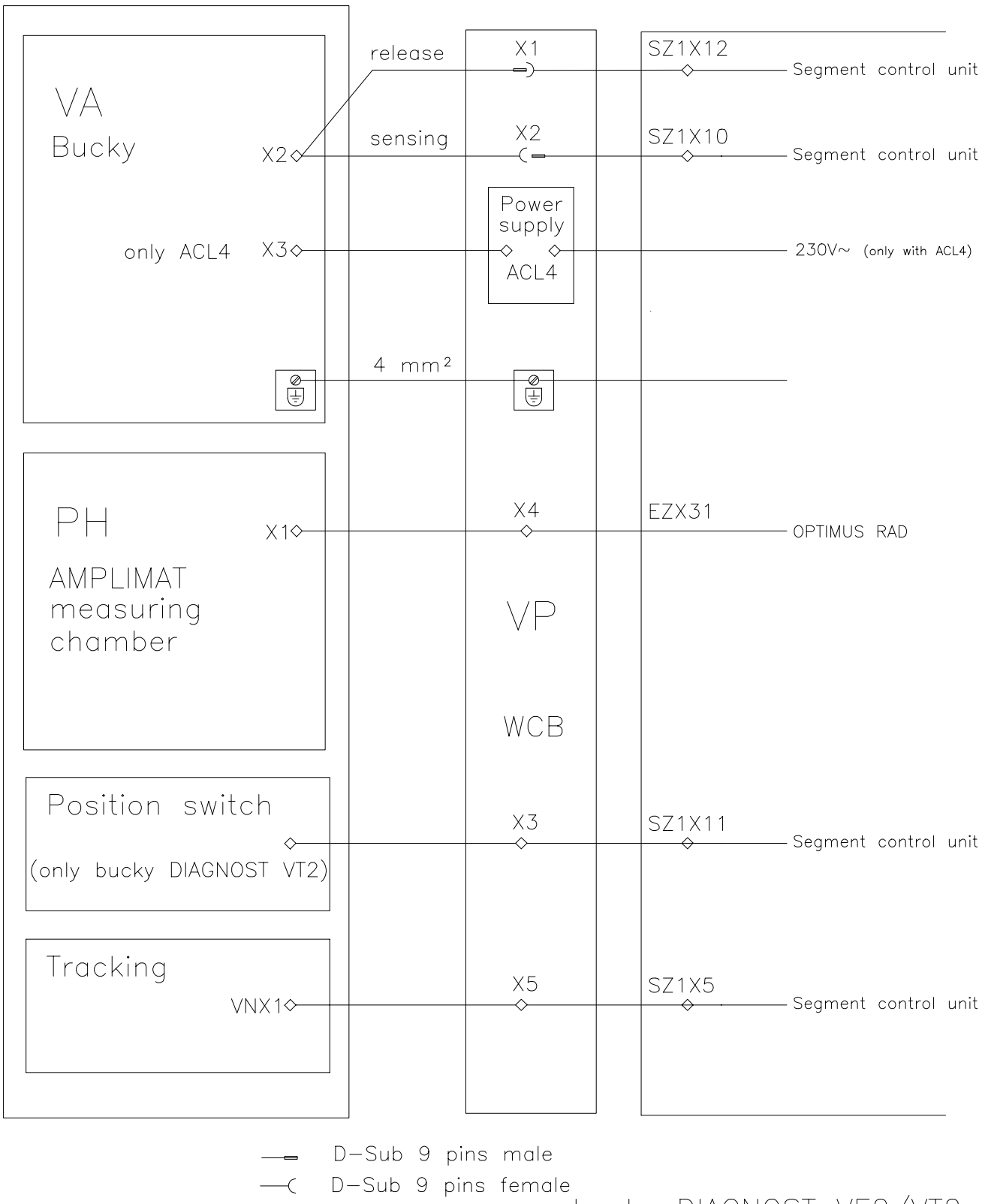
State of delivery



A4 00–05–23 Ost.
00971271

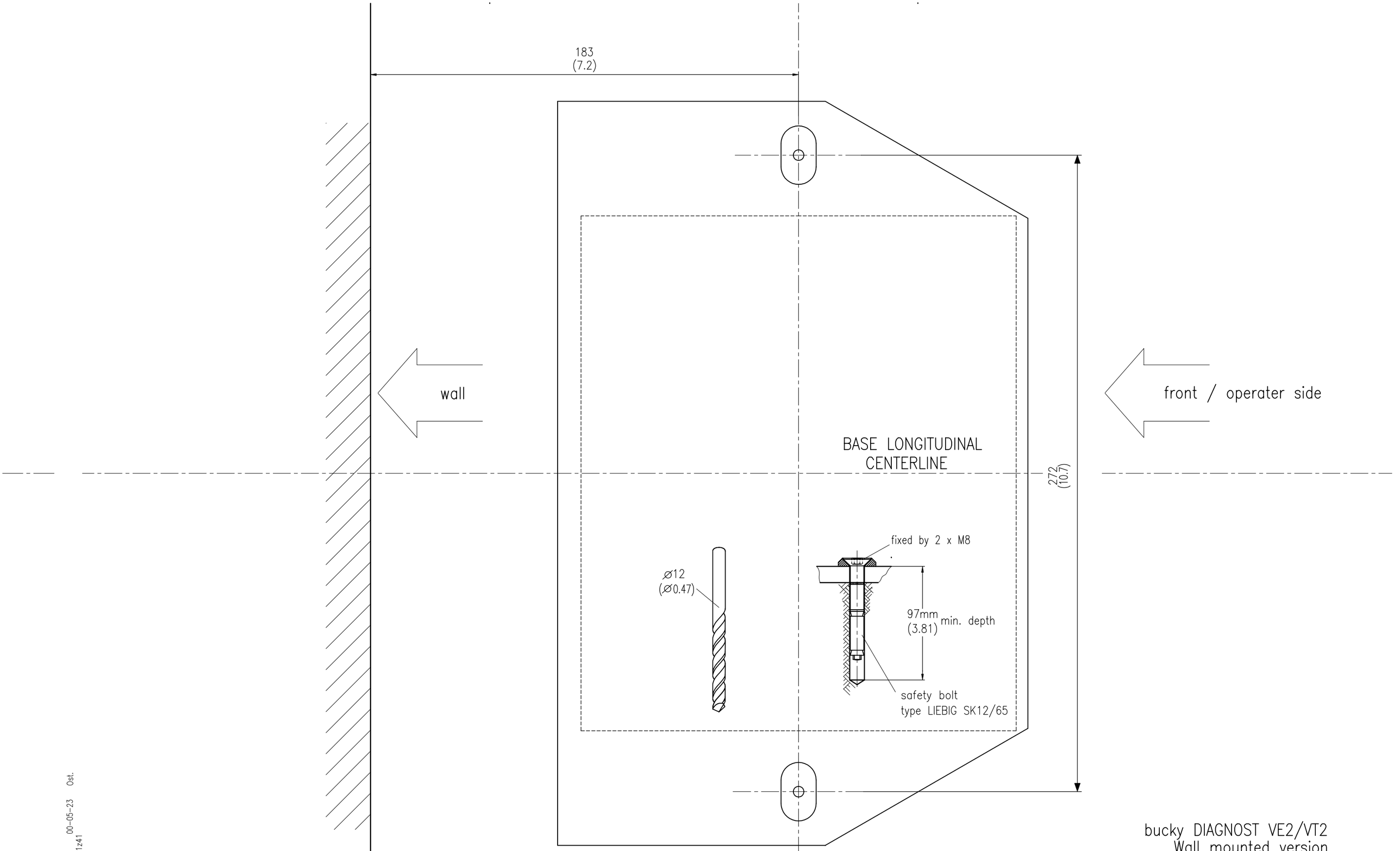
bucky DIAGNOST VE2/VT2
Connection diagram

State of delivery



A4 00-05-23 Ost.
00971z72

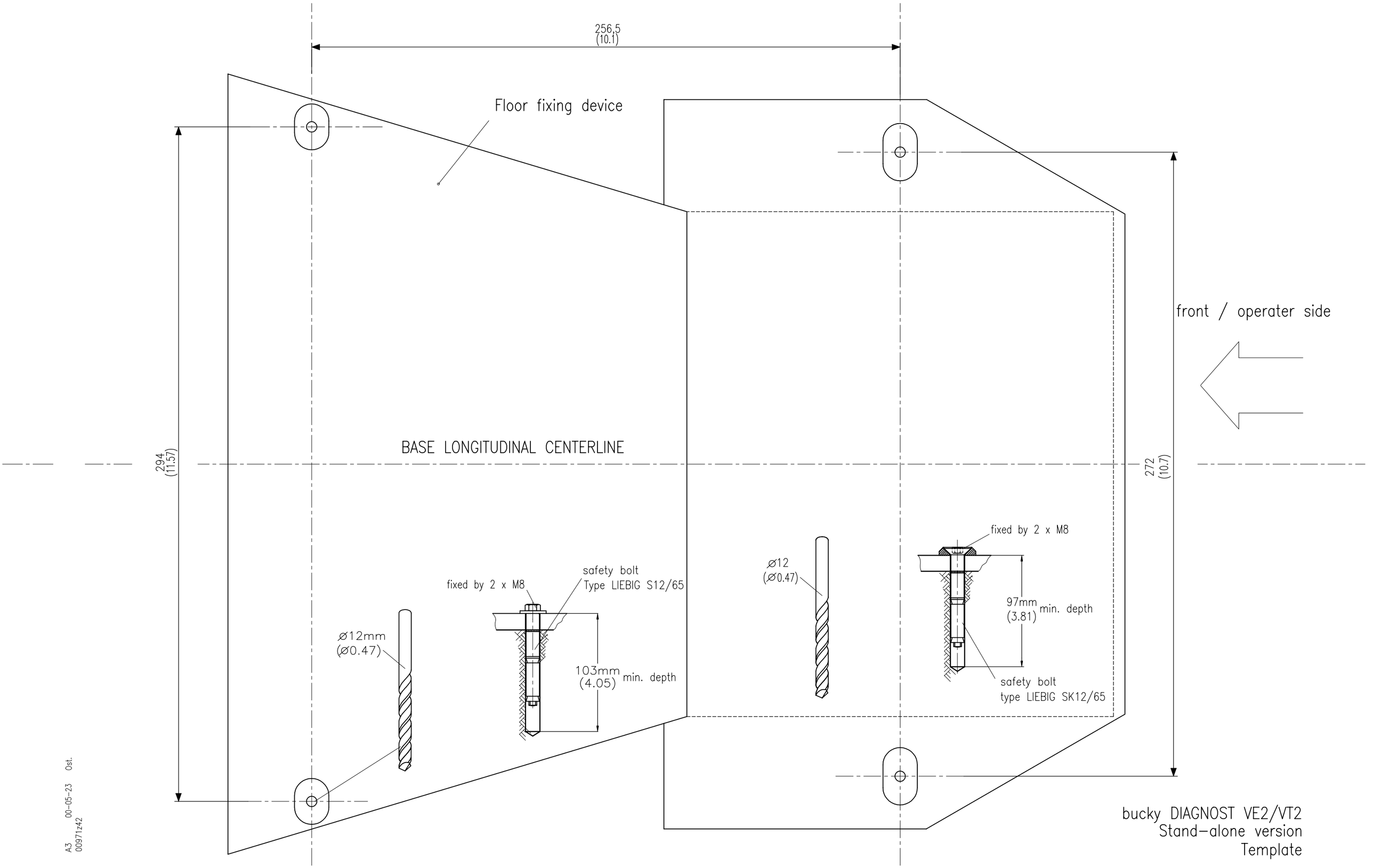
bucky DIAGNOST VE2/VT2
Segment control unit
Connection diagram



bucky DIAGNOST VE2/VT2
Wall mounted version
Template

All dimensions in millimeters (inches)

A3 00-05-23 Ost.
00971z41

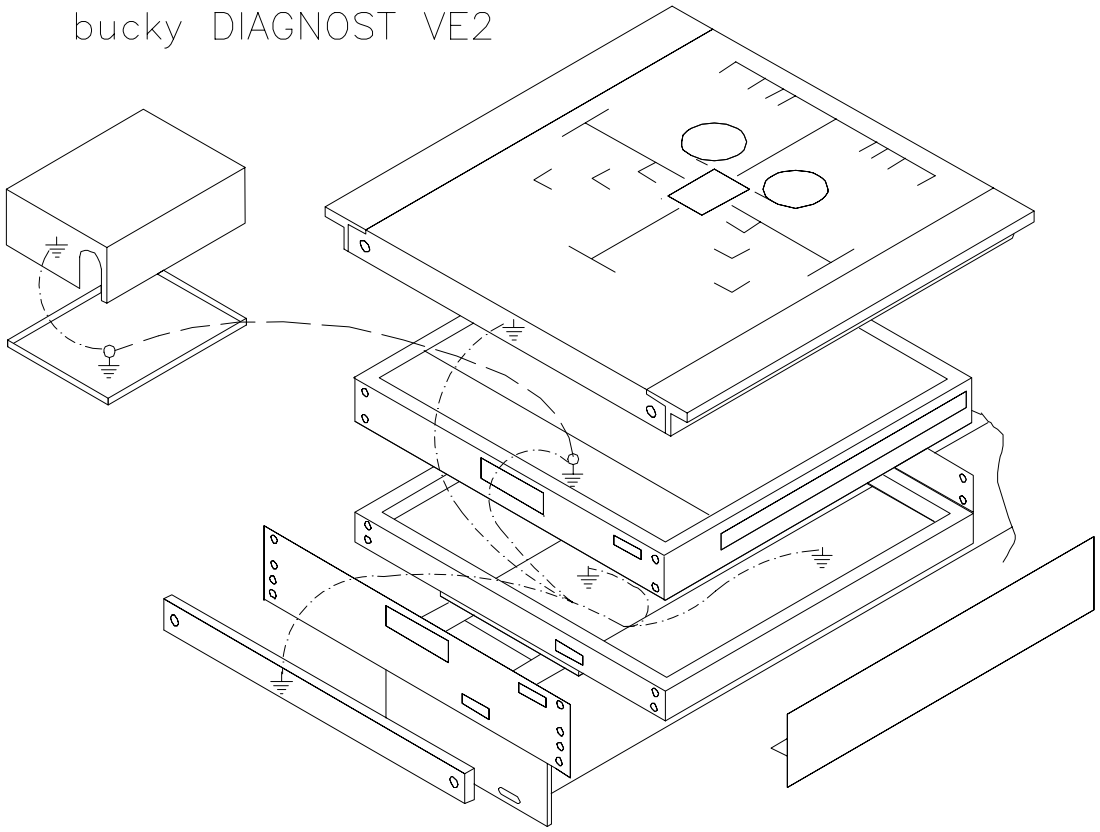


A3 00-05-23 Ost.
00971Z42

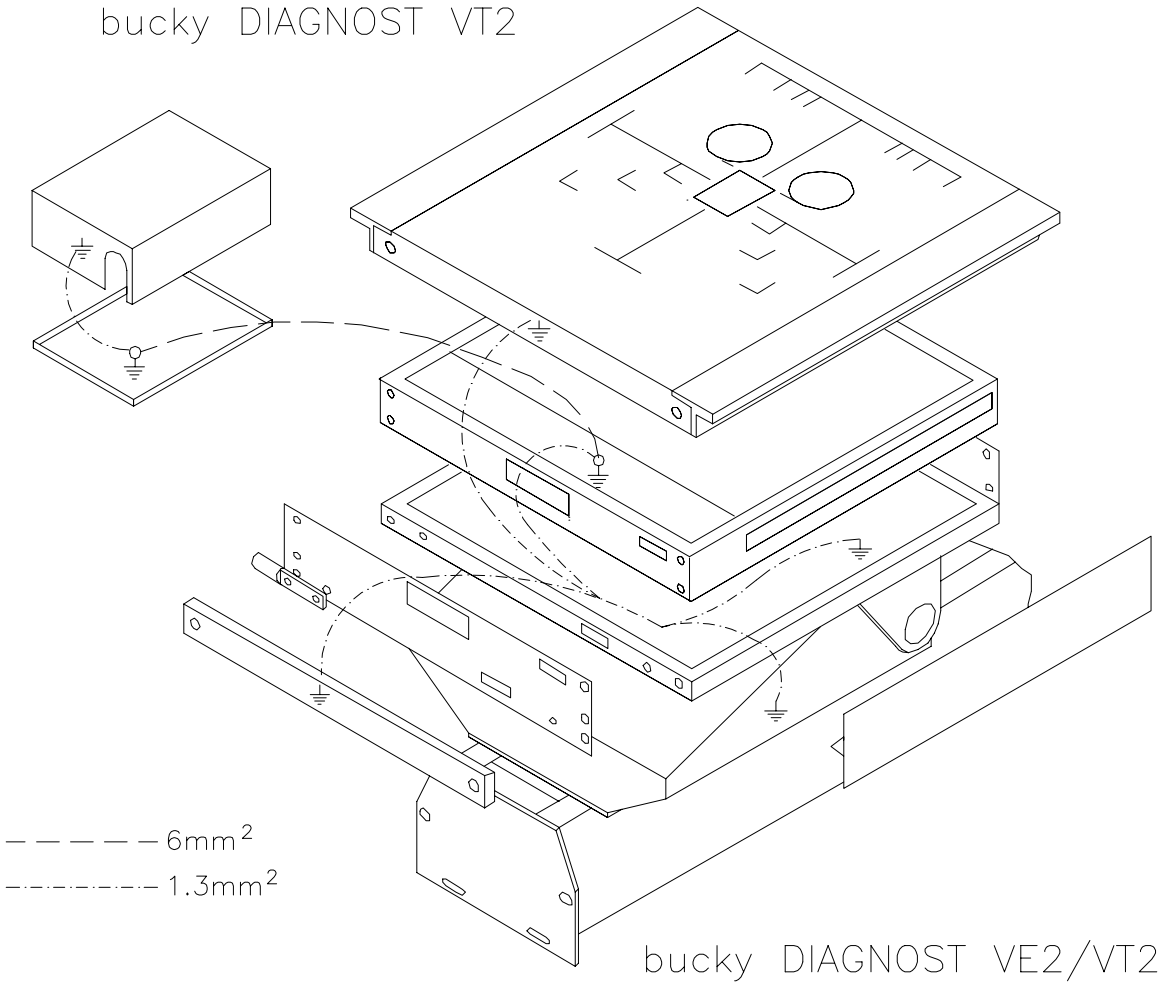
bucky DIAGNOST VE2/VT2
Stand-alone version
Template

All dimensions in millimeters (inches)

bucky DIAGNOST VE2

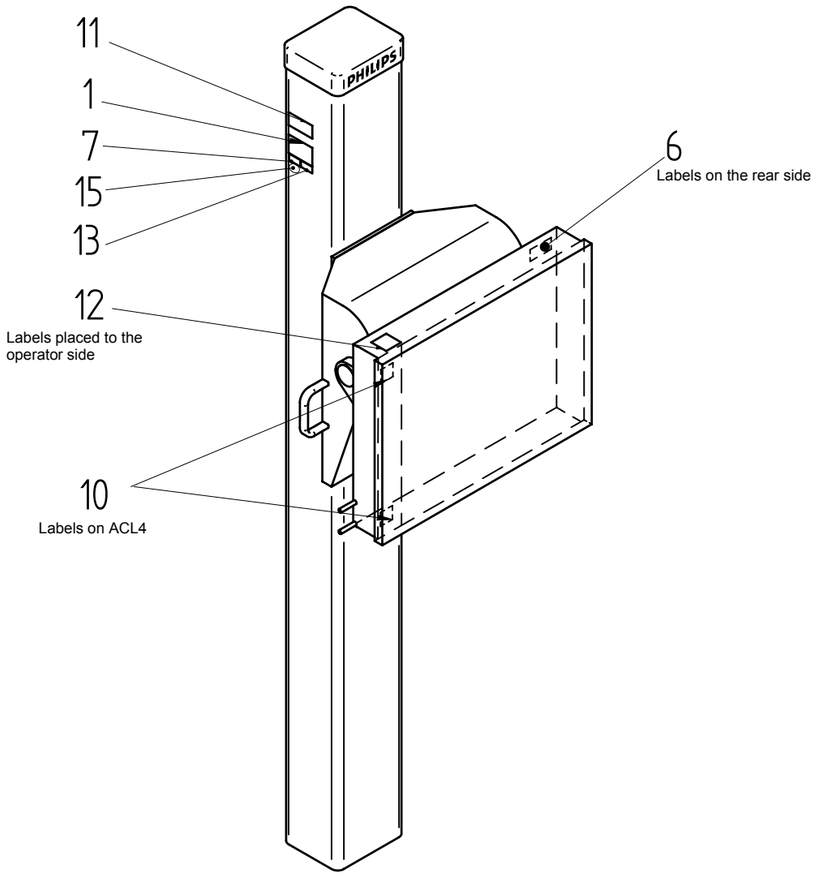


bucky DIAGNOST VT2



A4 00-05-23 Ost.
00971z73

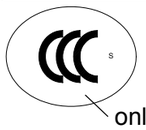
bucky DIAGNOST VE2/VT2
Earthing diagram



1

PHILIPS	Philips Medical Systems DMC GmbH Röntgenstr. 24 D-22335 Hamburg/Germany
type 9890 010 0651. s/n yy.00.nnn bucky DIAGNOST VE / VT	X-RAY EQUIPMENT WITH RESPECT TO ELECTRICAL FIRE, SHOCK AND MECHANICAL HAZARDS ONLY <641B>
Class I - Type B IEC 60601-1	Associated equipment IEC 60601-2-32:1994
7 CE 0123	230V ~ 50/60Hz 0,5A 13

15



only sticked on China-systems

6

PHILIPS	Philips Medical Systems DMC GmbH Röntgenstr. 24 D-22335 Hamburg/Germany
type 9848 600 0260. s/n yy.00.nnn ACL4 f. bucky VE2 / VT2	

11

type 4512 201 0230. s/n ____ bucky DIAGNOST VT2	This product complies with the DHHS requirements of 21 CFR Sub-chapter J Manufactured: June 2001	
	Made by HANS PAUSCH	CE

oder

type 4512 201 0229. s/n ____ bucky DIAGNOST VE2	This product complies with the DHHS requirements of 21 CFR Sub-chapter J Manufactured: June 2001	
	Made by HANS PAUSCH	CE

12

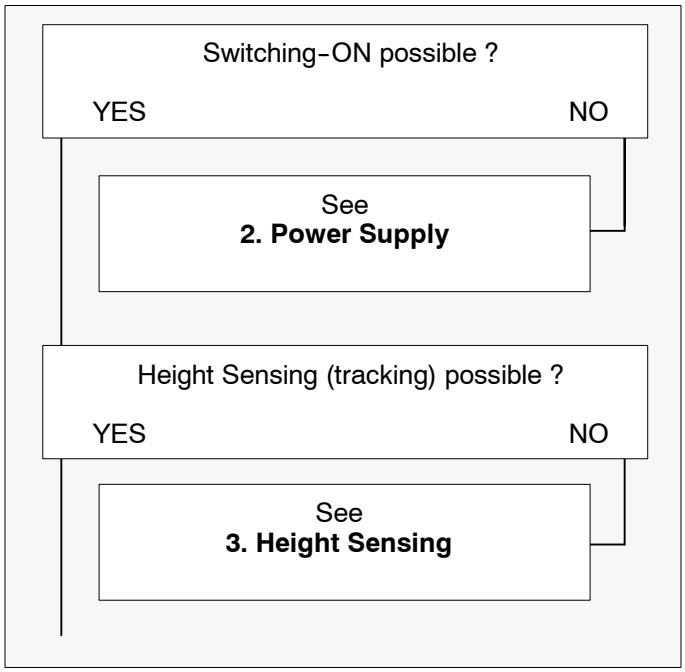
10

A2/A3 03-12-01 Schr.

BuckyDiagnost VE/VT with (ACL4) Labelling

FAULTFINDING

1. Faultfinding Guide

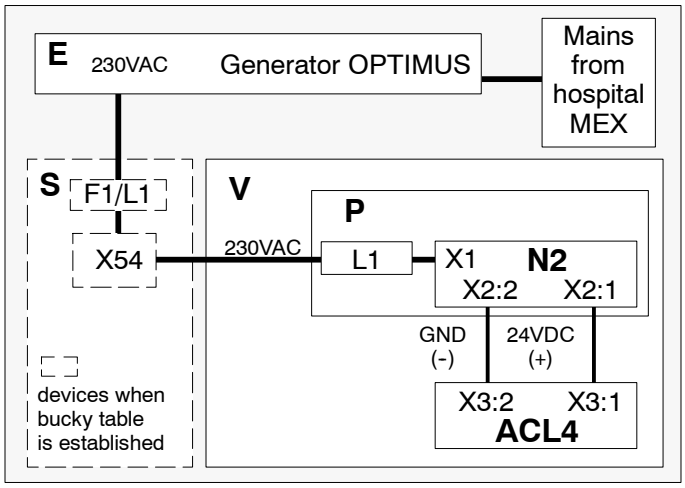


Convention

Switch is closed = ON
Switch is open = OFF

LED / lamp illuminates = ON
LED / lamp does not illuminate = OFF

2. Power Supply of bucky DIAGNOST VE2 / VT2 with ACL4



Mains power of 220VAC for

table via F1, L1 to X50 ...X56

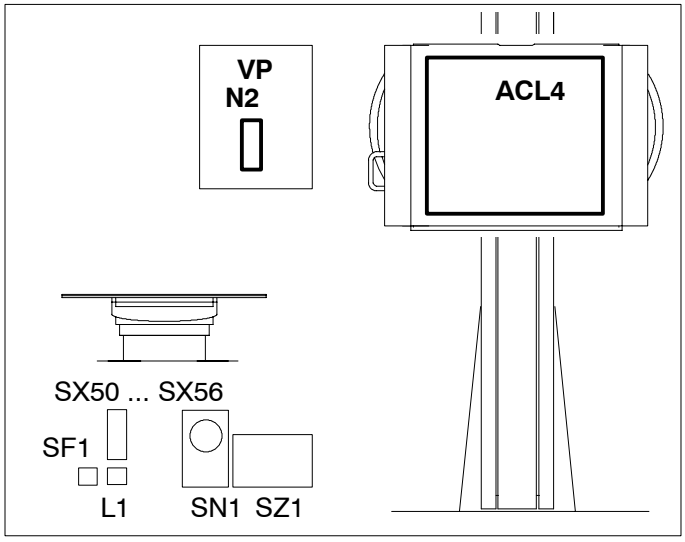
to

bucky DIAGNOST VE2 / VT2

wall connection box **VP** via L1 to
power supply board **N2** for

automatic cassette loader **ACL4**

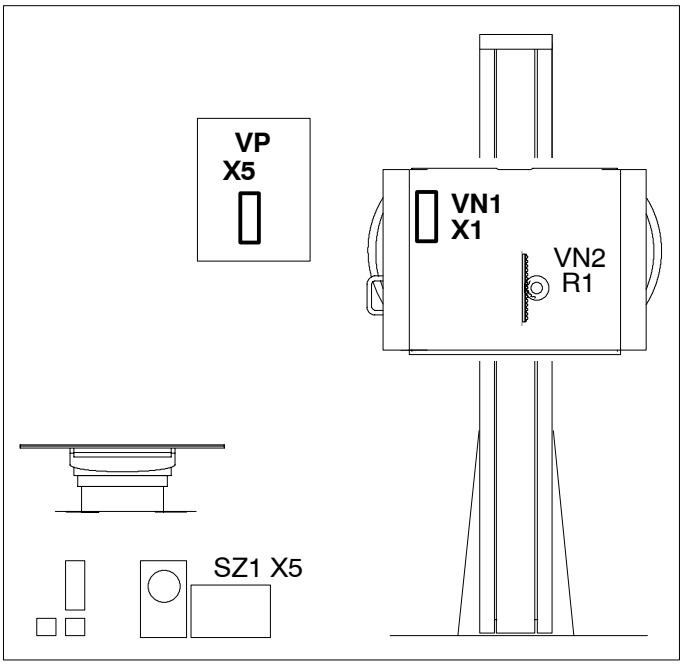
2.1. Location of electrical Components



3. Height Sensing

The function Height Sensing is used for tracking function of the ceiling suspension bucky DIAGNOST CS2 / CS4.

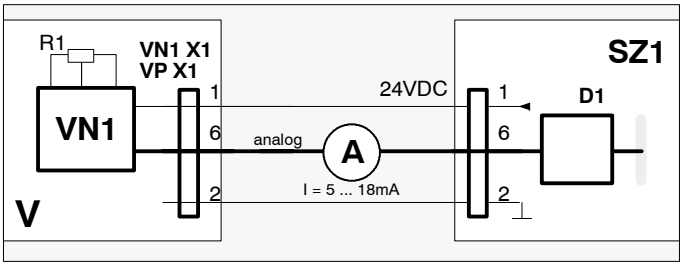
3.1. Height Sensor



- See also drawing 4Z-xx

The height sensor operates as a current source via **VN1**. The range of current value is 5mA (table is in lowest position) up to 18mA (table is in uppermost position)

The current value can be shown :



- Connect a service PC to **SZ1 X20**
- Call up program VT100 for monitoring
- Type↲
  - `superuser`↲
  - `set service output_errors_to_vt100 1`↲

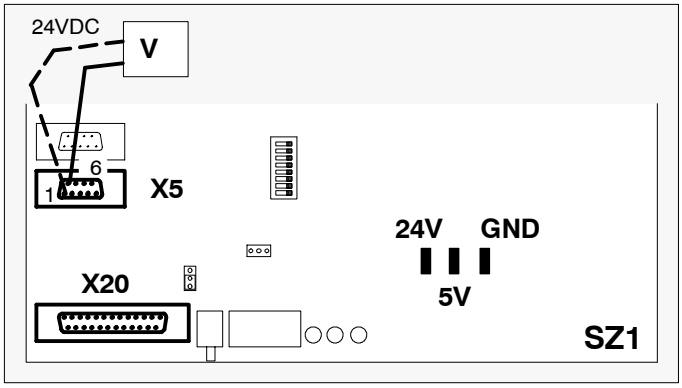
Every action will be shown on the PC screen, also the current depending on the topical table height.

- `show analogue`↲

The analogue inputs will be displayed on the PC screen.

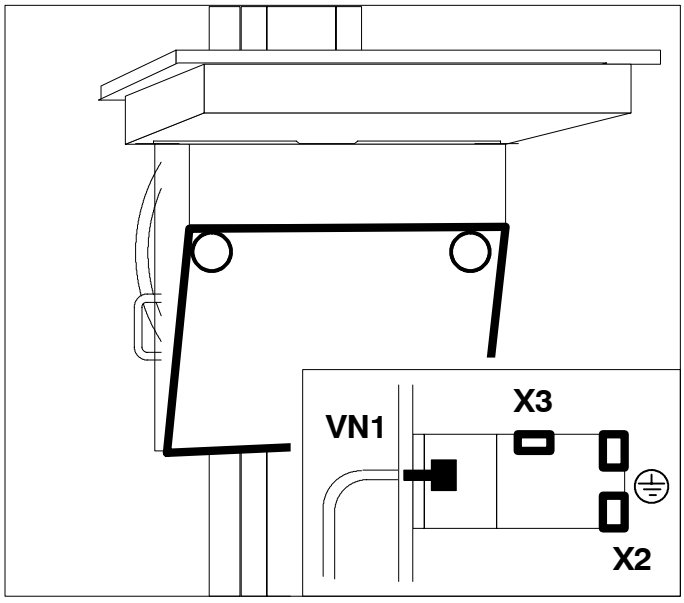
- `show service sid`↲

The SID parameters will be displayed on the PC screen.



- Check the height unit **VN1** at **SZ1 X5**, measure the current
  - If I = 0mA, check voltage at **X5:1** or find the reason in the cable
  - If I = 20mA, check the cable or replace the height unit

3.1.1. Replacement of the Height Unit



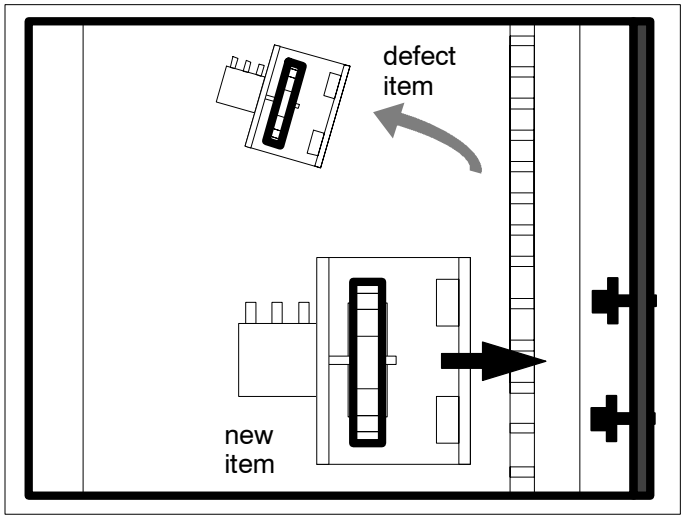
To reach the installation area, the bucky unit has to be tilted to a horizontal position.

- Remove screws.
- Remove cover.

- Disconnect all plugs at the board **VN1.**

- Replace the board after removing the fixing screw.
- Assemble in reverse direction

3.1.2. Replacement of the Height Potentiometer

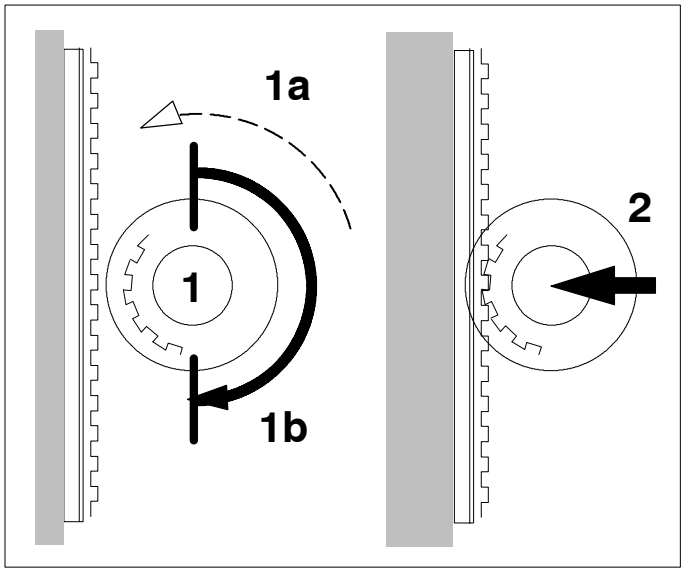


- Move the bucky unit to its **uppermost position**.

- Loosen two **M5x25mm screws** including **washers** on the bucky frame.
- Replace the height potentiometer

- Assemble in reverse direction

CAUTION:
Note the direction of rotation in the next step.



- Turn the potentiometer **1** manually to the end position **1a**.
- Turn the potentiometer approximately 1/2 turn in the reverse direction **1b**. Make sure it is not at the internal end stop.
- Insert the potentiometer unit **2**.
- Engage the potentiometer assembly with the toothed belt. The potentiometer must be movable but be engaged.
- Tighten the screws using a 7mm spanner.

- Move the bucky unit up and down and check whether the potentiometer is still engaged to the toothed belt through its complete range.

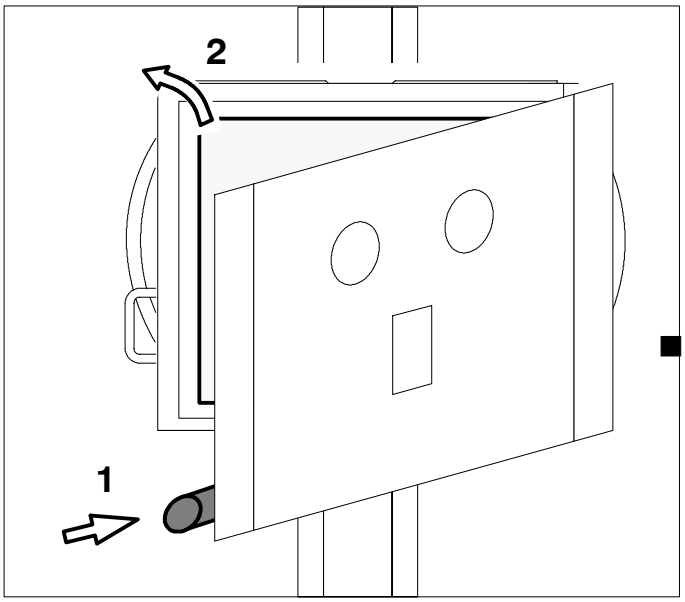
4. Measuring Chamber

- To qualify the exposure use the ??quality exposure tool??

4.1. Replacement of the Measuring Chamber

5. Anti-Scatter Grid

5.1. Replacement of the Anti-Scatter Grid



- **1** Open the top cover by pressing the button.
- **2** Remove the anti-scatter gride after unscrewing of four metal holders.
- Fit the new anti-scatter grid.

ADJUSTMENTS

1. Adjustment of the System

- See manual of X-Scope

2. Adjustment of SID-Positions

- See manual of bucky DIAGNOST CS
- See manual of bucky DIAGNOST TH2
- See manual of bucky DIAGNOST VE2 / VT2

3. Delay Time Check by Test Exposures

To do the adjustment of exposure delay time preworks are necessary for access to the anti scatter grid of

bucky table

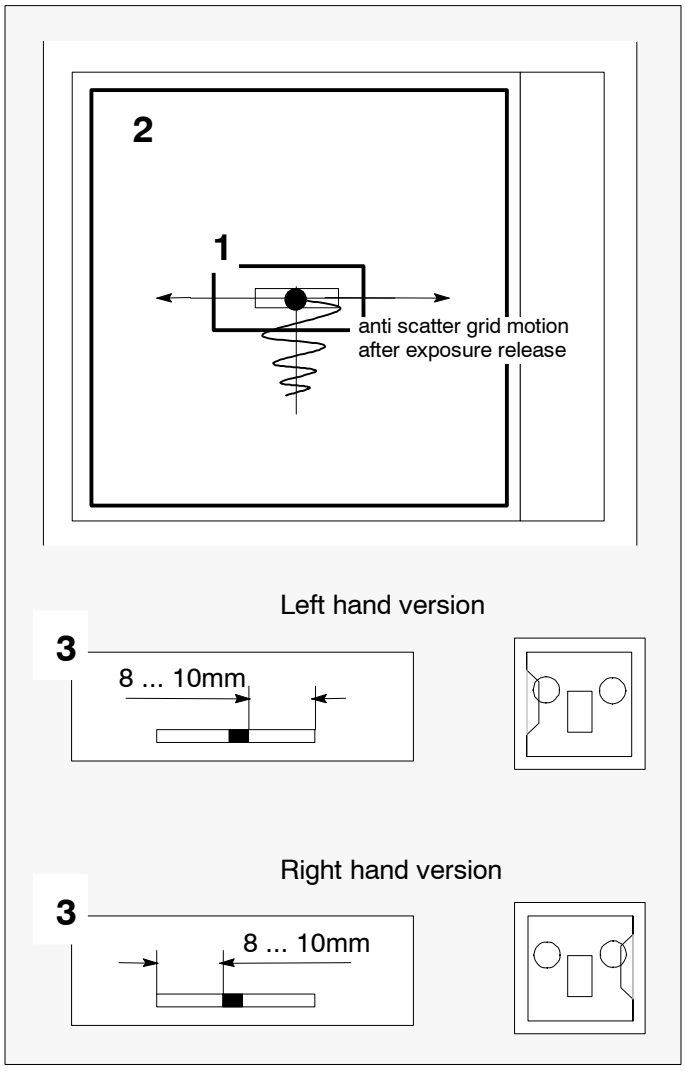
- Remove the table top

- Check the delay time by test exposure
  - Lay the lead plate **1** on the grid **2**, fix with a piece of adhesive tape.
  - Make two exposures (see table) on the same film. The exposure will shown a spot and a bar **3**.

Exposure	Exposure time [sec]	[kV]	[mA]	Focus [mm]
1	0.5	60	15	0.6
2	0.02	125	25	0.6

- Measure the distance as shown in the figure **3**, respect the wall stand version

- If necessary increase or decrease exposure time.



3.1. Cassette Loader INALFA

- See manual of INALFA

3.2. Cassette Loader ACL4

- See manual of ACL4

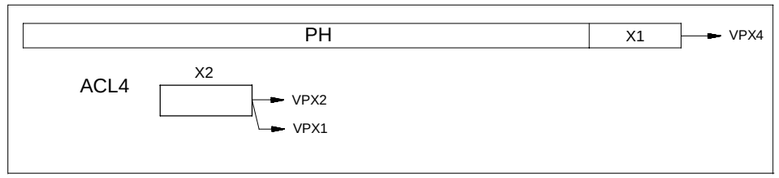
3.3. Cassette Loader DDF

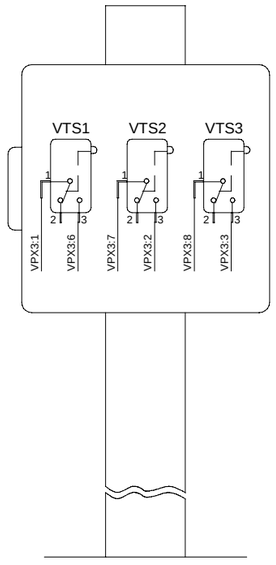
- See manual of DDF

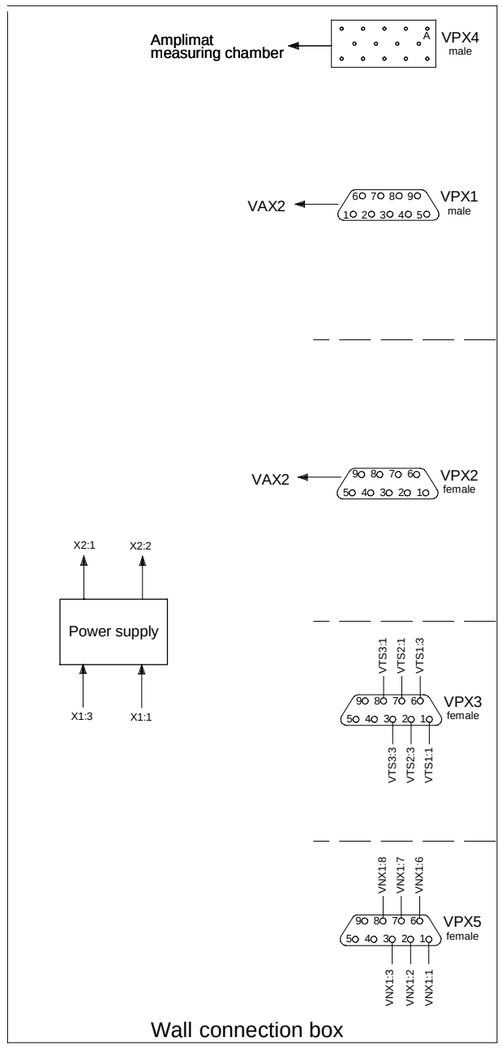
bucky DIAGNOST VE2/VT2

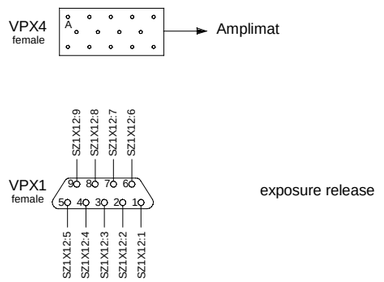
bucky DIAGNOST TH2

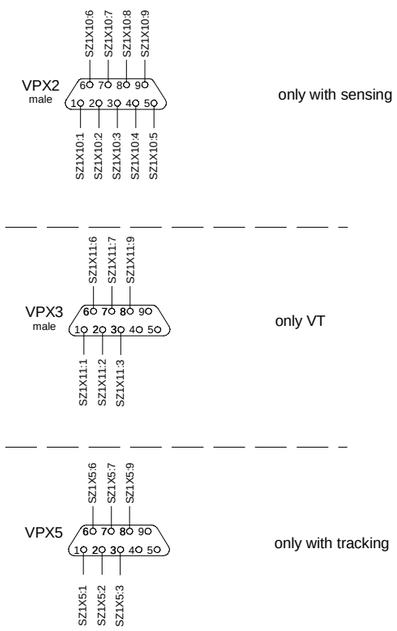
with bucky controller











A1/A3 99-03-15 Ost.

Wiring diagram
with ACL4 and tracking